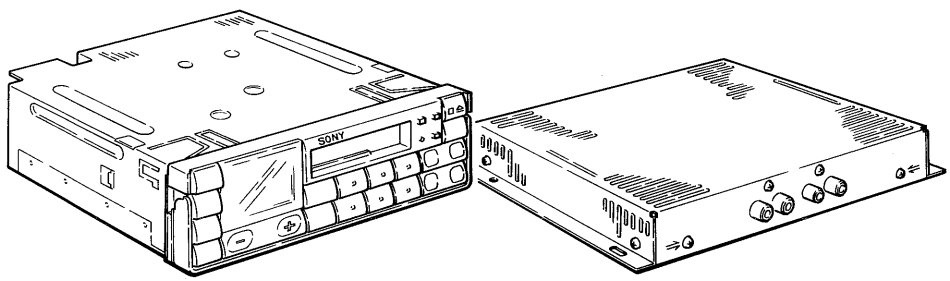
XR-7300

SERVICE MANUAL

US Model
Canadian Model
AEP Model
E Model



Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol ▯▯ are trademarks of Dolby Laboratories Licensing Corporation.

SPECIFICATIONS

Model Name Using Similar Mechanism	XR-7301, XR-7302
Tape Transport Mechanism Type	MG-71-83

AUDIO POWER SPECIFICATIONS

POWER OUTPUT AND TOTAL HARMONIC DISTORTION (US, Canadian)
17 watts per channel minimum continuous average power into 4 ohms, 4 channels driven from 30–20,000 Hz with no more than 1% total harmonic distortion per Car Stereo Ad Hoc Committee standards.

OTHER SPECIFICATIONS

Power amplifier section

Outputs	Speaker outputs (sure seal connectors).
Inputs	Line inputs (phono jacks)
Speaker impedance	3.2–8 ohms
Maximum power output	(AEP, E model) 30 watts per channel at 4 ohms* (4 channels driven) *Measured at 14.4 V

Cassette player section

Tape	Prerecorded tape cassette
Head	Playback head
Tape track	4-track 2-channel stereo
Frequency response	30–18,000 Hz
Signal-to-noise ratio (A-weighted) (Dolby NR off)	58 dB (TYPE II, IV cassette) 55 dB (TYPE I cassette)
Dolby NR effect	More than 18 dB (C-type, CCIR/ARM)
Wow and flutter	0.15% (WRMS)
Crosstalk	Between channels: better than 30 dB

Tuner section

System	FM/AM superheterodyne tuner Computerized quartz-locked synthesizer system

FM tuner section

Tuning range	US/Canadian model: 87.9–107.9 MHz AEP/E model: 87.5–108.0 MHz
Antenna terminal	FM/AM external antenna connector FM/AM power antenna relay control lead
Intermediate frequency	10.7 MHz
Usable sensitivity	11.0 dBf (75 ohms)
Sensitivity at 50 dB quieting	15 dBf (75 ohms)
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 70 dB (mono)
Harmonic distortion at 1 kHz	0.5% (stereo), 0.3% (mono)
Separation	40 dB at 1 kHz
Frequency response	30–15,000 Hz
Capture ratio	2.0 dB

0 dB = 0.775 V (AF)
0 dB = 1μV (RF)

— Continued on page 2 —

FM/AM CASSETTE CAR STEREO

SONY®

AUD

AM tuner section

Tuning range: US/Canadian model: 530 – 1,620 kHz; AEP model: 531 – 1,602 kHz; E model: 531 – 1,602 kHz (at 9 kHz step), 530 – 1,620 kHz (at 10 kHz step)
Antenna terminal: FM/AM external antenna connector; FM/AM power antenna relay control lead
Intermediate frequency: 450 kHz
Sensitivity: 35μV

General

Tone controls: Bass ±10 dB at 100 Hz; Treble ±10 dB at 10 kHz
Loudness (at −30 dB): +6 dB at 100 Hz; +5 dB at 10 kHz
Output lead: Line output lead (LINE OUT FRONT, LINE OUT REAR); Remote control output lead (REM OUT); Amplifier remote control lead (AMP REM)
Input lead: Remote control input lead (REM IN); Auxiliary line input lead (AUX IN)
Input/output connector: 13-pin DIN connector for the optional Sony CD player

Power requirements: 12 V DC car battery (negative ground)
Dimensions (without bracket)
Main unit
Approx. 178 × 50 × 145 mm (w/h/d) (7 1/8 × 2 × 5 3/4 inches) not incl. projecting parts and controls
Hide-away amplifier
Approx. 178 × 30 × 135 mm (w/h/d) (7 1/8 × 1 3/16 × 5 3/8 inches) not incl. projecting parts
Mounting dimensions (with bracket)
Main unit
Approx. 182 × 53 × 145 mm (w/h/d) (7 1/4 × 2 1/8 × 5 3/4 inches) not incl. projecting parts and controls
Weight: Main unit Approx. 2.1 kg (4 lb 10 oz); Hide-away amplifier Approx. 0.8 kg (1 lb 12 oz)
Accessories supplied: Mounting hardware (1 set); 1-ampere fuse (1); 3.15-ampere fuse (1); 12-ampere fuse (1)

Design and specifications subject to change without notice.

FEATURES

Tuner section

- Memory preset tuning function allows you to store stations in memory.
- Automatic storing function for quick and easy memory presetting.

Cassette deck section

- The Automatic Music Sensor (AMS) function locates a selection as far ahead or as far back as 6 selections.
- The C-type Dolby NR system is incorporated as well as the B-type Dolby NR system.

General

- Composed of the main unit and the hide-away 4-channel power amplifier with a maximum power output of 30 W per channel.
- Slide-out anti-theft chassis allows you to take the main unit away with you when you leave your car.
- Auxiliary input for enhanced system using optional Sony car audio.
- Fully electronic volume, bass, treble, balance and fader control with easy-to-read LCD indication.

This service manual covers the following three models.

Model	Receiving band	Frequency range and tuning interval
US and Canadian model	FM1/FM2/FM3/AM	FM : 87.9-107.9 MHz, 200 kHz step AM : 530-1620 kHz, 10 kHz step
AEP model	FM1/FM2/FM3/AM	FM : 87.5-108.0 MHz, 50 kHz step AM : 531-1602 kHz, 9 kHz step
E model	FM1/FM2/AM	FM : 87.5-108 MHz, 50 kHz step AM : 531-1602 kHz, 9 kHz step or 530-1620 kHz, 10 kHz step adjustable

Major operations and performance of these models are identical.
When differences occur, they are clearly described in the appropriate sections.

CONTENTS

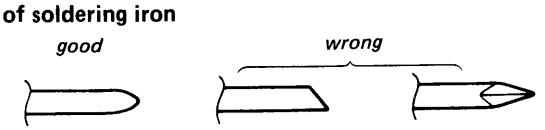
SPECIFICATIONS 1
FEATURES 2
SECTION 1 SERVICING NOTE 3–4
SECTION 2 OUTLINE
2-1. LOCATION AND FUNCTION OF CONTROLS 5–8
2-2. CIRCUIT DESCRIPTION 9–12
SECTION 3 ADJUSTMENTS
3-1. MECHANICAL ADJUSTMENTS 13
3-2. ELECTRILCAL ADJUSTMENTS 14–18
SEMICONDUCTOR LEAD LAYOUTS 19
SECTION 4 DIAGRAMS
4-1. AM FRONT END 20
4-2. FM FRONT END 20
4-3. IC BLOCK DIAGRAMS 21–22
4-4. CIRCUIT BOARDS LOCATION 23
4-5. MOUNTING DIAGRAM (Main Board) 24–28
4-6. SCHEMATIC DIAGRAM (Main Board) 29–31
4-7. SCHEMATIC DIAGRAM (Power Amp Board) 32–34
4-8. MOUNTING DIAGRAM (Power Amp Board) 35–37
SECTION 5 EXPLODED VIEWS AND PARTS LIST 38–42
SECTION 6 ELECTRICAL PARTS LIST 43–50
SECTION 7 TROUBLE SHOOTING 51

SECTION 1
SERVICING NOTE

1-1. FLEXIBLE CIRCUIT BOARD REPAIRING

1. Keep the temperature of the soldering iron at 270° ± 10°C during repairing.
   You can maintain the temperature of the soldering iron around 270°C by using the thermal controller as illustrated on the right.
2. Do not touch the soldering iron more than 4 seconds or 3 times on the same conductor of the circuit board.
3. Do not apply force on the conductor when soldering or unsoldering.

Tip of soldering iron



1-2. MELF PARTS COMPONENTS (METAL ELECTODES FACE-BONDING)

Warning

If MELF components are forcibly removed from the printed circuit board with pincers or pliers, the circuit board pattern is likely to peel away. Always remove MELF components according to the procedure described on the next page. Replace MELF components with the lead type components.

MELF components are soldered directly to the surface of the printed circuit board.

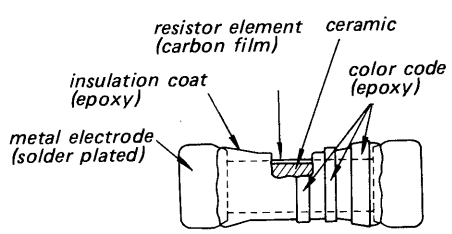
MELF resistors and capacitors have the same dimensions and are distinguished by their background colors: light brown for resistors, and pink or light green for capacitors.

The MELF resistor color coding is the same as for conventional resistors, and MELF capacitor color coding is the same as for tube-type ceramic capacitors. Note, however, that all MELF resistors are rated at ¼W and ±5%.

Components larger than resistors and without a color code are cross conductors, which are used instead of jumper wires.

1. Structure

(Resistors)



– Continued on page 4 –

(Capacitors)

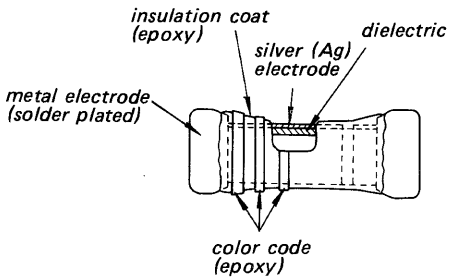
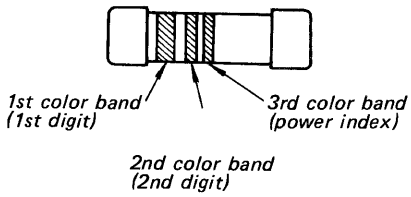
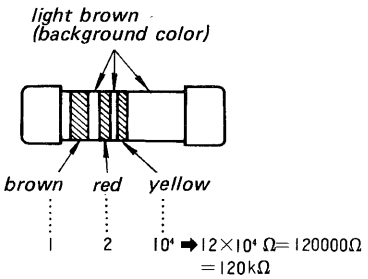


Fig. 1

2. Color Code Reading



(Example of Resistor)



(Example of Capacitor)

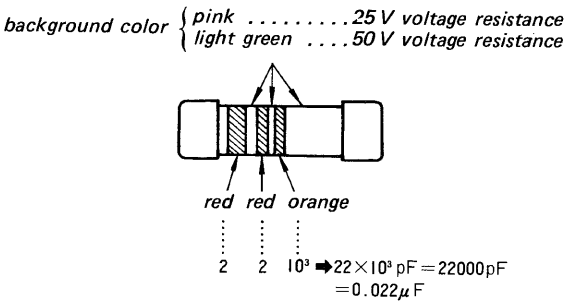


Fig. 2

3. How to Remove MELF Components and Mount Replacements

Use a soldering iron of at least 40W with an iron tip 4 mm in diameter and file the tip down to the angle shown in the diagram.

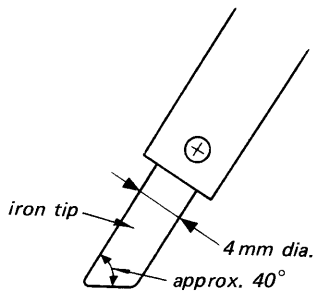


Fig. 3

1. Bring the flat surface of the soldering iron in equal contact with both soldered ends of the component.
2. The solder should melt in about 4 seconds. (The solder will melt more readily if a small amount of solder is attached to the iron tip and the iron tip is placed against the component.)
3. Once the solder has melted, tap the component aside with the tip of the soldering iron, and remove it from the board.

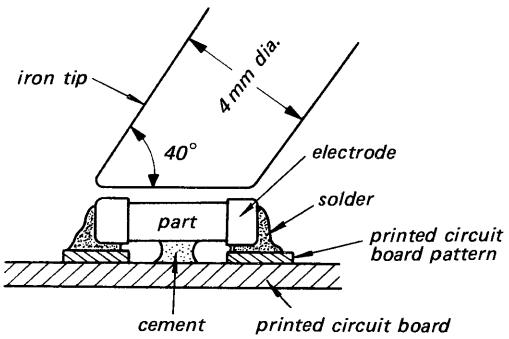


Fig. 4

4. Use lead type resistors or capacitors to replace the MELF components.
   These replacements may be mounted either with short leads (see Fig. 5), or by covering a lead with tubing (see Fig. 6).

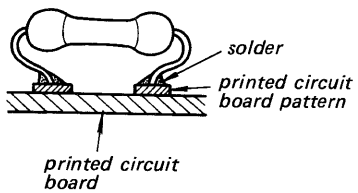
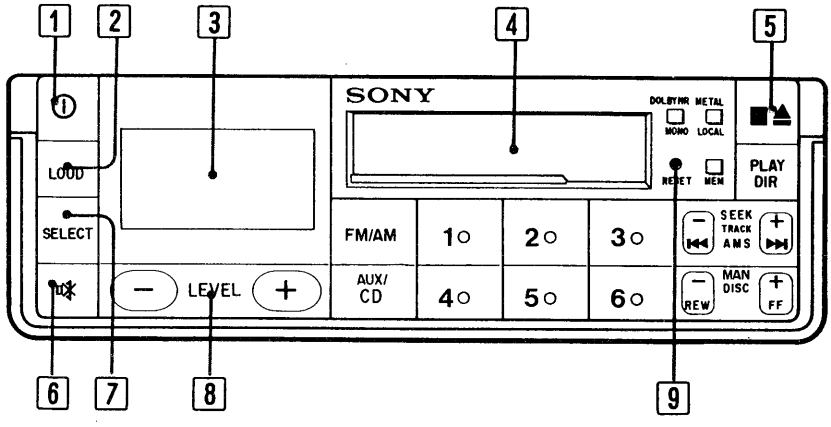


Fig. 5

Note: *Use 3216 type chip components to repiace the MELF capacitor components.*
See page 4, 5 for mounting of chip components.

SECTION 2
OUTLINE

2-1. LOCATION AND FUNCTION OF CONTROLS



1 ⏻ (power) switch
Press to turn on and off the unit.

2 LOUD (loudness) button
Press to reinforce bass or treble especially when listening at low volume.
The LOUD indicator appears.
To disengage the button, press it again.

3 Display window

4 Cassette insertion door

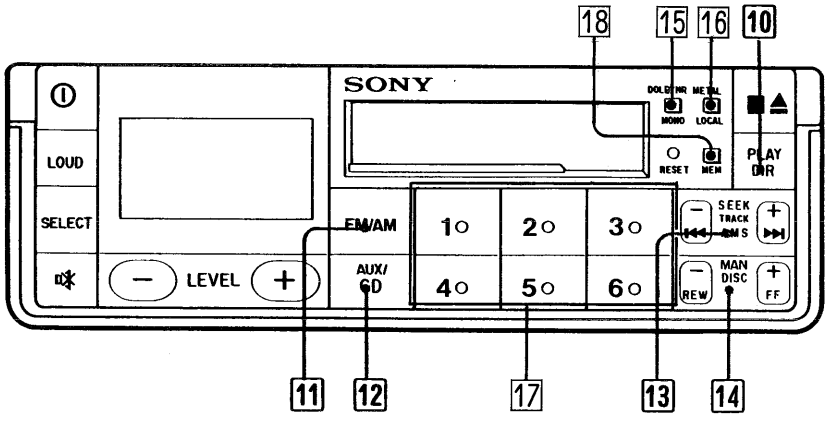
5 ■ ⏏ (stop/eject) button
When pressed once during tape playback, the tape stops.
When pressed again, the tape is ejected.
When pressed once during radio reception, the tape is ejected.
When kept pressed for more than 1 second during tape playback, the tape stops and is ejected.

6 🔇 (muting) button
Press to momentarily mute the sound.
The MUTE indicator appears. Press again to restore the same sound level as before.
If the power is turned off while the sound is muted, the muting mode will be cancelled.

7 SELECT button
Press to select the sound control mode—volume, bass, treble, balance or fader.
In accordance with the selected mode, the VOL (volume), BAS (bass), TRE (treble), BAL (balance) or FAD (fader) indicator appears.
Normally the VOL indicator is displayed.

8 LEVEL button
Normally this button operates as a volume control.
Press it to adjust the sound level and quality selected with the SELECT button.

9 RESET button
Press this button when no button or control functions.



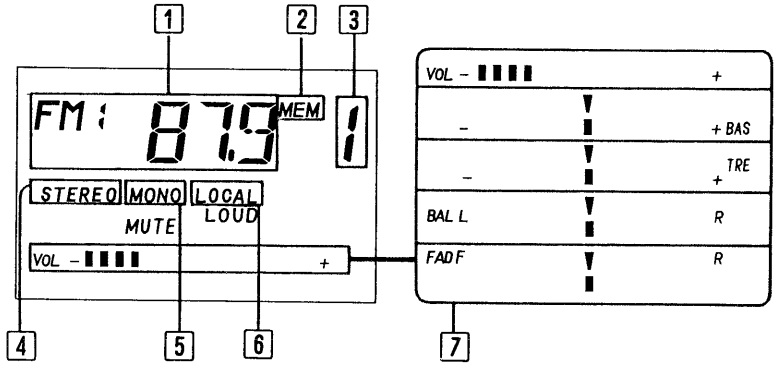
	Current operation mode	
	Tape playback	Radio reception
10 PLAY/DIR (playback/tape transport direction) button	Press to change the side of the cassette to be played back.	Press to start tape playback.
11 FM/AM select button	Press to turn on the radio.	Press to select the band.
12 AUX/CD (auxiliary input/CD) select button*	Press to listen to the auxiliary input source**.	
13 SEEK/TRACK/AMS button*	Press ⏮ or ⏭ side to locate the beginning of the selection.	Press – or + side to search for the desired station.
14 MAN/DISC/REW-FF (manual/disc/rewind-fast forward) button*	Press REW or FF side for fastwinding of the tape.	Press – or + side to tune in the station manually.

* These buttons are also used to start and control compact disc play using the optional Sony CD player.
** Connect only the Sony car audio to the AUX IN connector of the XR-7300.

	Current operation mode	
	Tape playback	Radio reception
15 DOLBY NR/MONO (Dolby noise reduction*/monaural) button	Press to activate B-type or C-type Dolby noise reduction system. DD B or DD C indicator appears.	Press to reduce noise during reception of a weak FM stereo program. The MONO indicator appears. Press again to disengage.
16 METAL/LOCAL button	Press when listening to CrO_2 (TYPE II) or metal (TYPE IV) tapes. The METAL indicator appears. Press again to disengage.	Press to eliminate interference from adjacent stations during reception of a strong station. The LOCAL indicator appears. Press again to disengage.
17 Preset number buttons	Used for the AMS function.	Press to memorize the frequency or to receive a preset station.
18 MEM (memory) button	——	Press to memorize the tuned station. The MEM indicator appears. Keep this button pressed for more than 2 seconds to activate the automatic storing funtion.

* Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

Display window



During radio reception

1 Band and frequency indicators

2 MEM (memory) indicator

3 Preset number indicator
Shows the selected preset number.

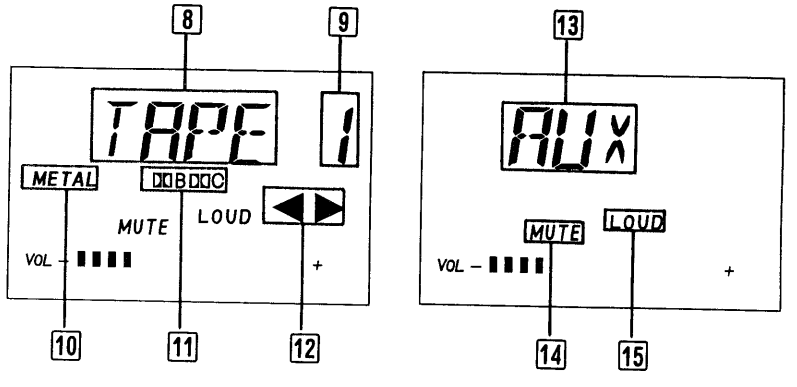
4 STEREO (FM stereo) indicator
Appears when an FM stereo program of sufficient signal strength is tuned in.

5 MONO indicator

6 LOCAL indicator

Display for the electronic sound level control

7 Sound control indicator and level scale
Normally the level scale shows the overall sound level. By switching the SELECT button, it also shows the level of treble response, bass response, the balance of left (L) and right (R) channels or of front (F) and rear (R) speakers.



During tape playback

8 Mode indicator
TAPE: Appears during tape playback.
FF/REW: Appears when fast-winding the tape.
FF AMS/REW AMS: Blinks when the AMS function is activated.

9 AMS selection number indicator

10 METAL indicator

11 □□ B/ □□ C (Dolby NR B/Dolby NR C) indicator

12 Cassette side indicator
▶: The side facing upward is being played back.
◀: The side facing downward is being played back.

During playback of the auxiliary input

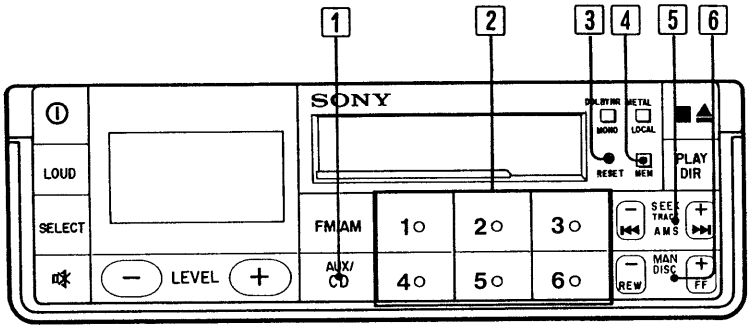
13 AUX (auxiliary) indicator
Appears when the AUX/CD button is pressed and the auxiliary input is selected.

During any operation modes

14 MUTE indicator

15 LOUD (loudness) indicator

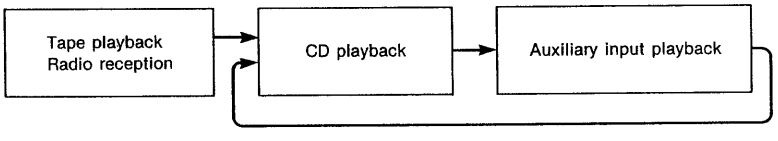
The following buttons are used to control compact disc play.



1 AUX/CD (auxiliary input/CD) select button

During tape playback or radio reception, press this button to listen to the auxiliary input source or to the CD.
Each time this button is pressed, the playback mode is switched as follows.

To return to the tape playback or to the radio reception, use PLAY/DIR or FM/AM respectively.



2 Preset number buttons
Used for the program play.

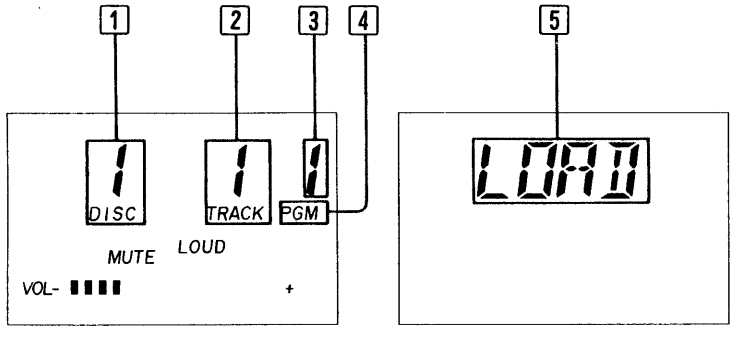
3 RESET button

4 MEM (memory) button
Press to program the selection being played.

5 SEEK/TRACK/AMS button
Press ⏮ or ⏭ side to locate the desired selection on the disc being played.

6 MAN/DISC/REW-FF (manual/disc/rewind-fast forward) button
Press – or + side to change the disc to be played.

Display window



1 DISC indicator

2 TRACK indicator

3 Index indicator
Shows the index number.

4 PGM (program) indicator

5 Mode and warning indicator

2-2. CIRCUIT DESCRIPTION

IC203 ELECTRONIC VOLUME-CONTROLLER TC9188F:

Pin No.	I/O	Name	Function
1		A-GND	Analog ground (L-ch)
2	I	ATT_2-IN	Audio input to 1dB-STEP ATTENUATOR (L-ch)
3	O	ATT_2-OUT	Audio output from 1dB-STEP ATTENUATOR (L-ch), 10 levels (0~-9dB)
4	O	F	Audio output from FADER CONTROL (front) (L-ch)
5	O	R	Audio output from FADER CONTROL (rear) (L-ch)
6	I	FADER-IN	Audio input to FADER CONTROL (L-ch)
7		FADER-GND	Grounding pin for FADER CONTROL (L-ch)
8	I	TONE-IN	Audio input to TONE CONTROL (L-ch)
9		BASS 1	Tap 1 of BASS CONTROL (L-ch)
10		BASS-COM	Common terminal of variable-resistor network for BASS CONTROL (L-ch)
11		BASS 2	Tap 2 of BASS CONTROL (L-ch)
12	O	TONE-OUT	Audio output from TONE CONTROL (L-ch)
13		TREBLE-COM	Common terminal of variable-resistor network for TREBLE CONTROL (L-ch)
14		NC	Opened or grounded
15	I	ST	Strobe signal input pin, high active
16		GND	Ground for V_{DD}
17	I	V_{DD}	Power-supply voltage input pin. Connects to pin 38.
18	I	CK	Clock signal input to read control data
19	I	DATA	Control data input pin (serial)
20		NC	Opened of grouned.
21		TREBLE-COM	Common terminal of variable-resistor network for TREBLE CONTROL (R-ch)
22	O	TONE-OUT	Audio output from TONE CONTROL (R-ch)
23		BASS 2	Tap 2 of BASS CONTROL (R-ch)
24		BASS-COM	Common terminal of variable-resistor network for TREBLE CONTROL (R-ch)
25		BASS 1	Tap 1 of BASS CONTROL (R-ch)
26	I	TONE-IN	Audio input to TONE CONTROL (R-ch)
27		FADER-GND	Grounding pin for FADER CONTROL (R-ch)
28	I	FADER-IN	Audio input to FADER CONTROL (R-ch)
29	O	R	Audio output from FADER CONTROL (R-ch)
30	O	F	Audio output from FADER CONTROL (R-ch)
31	O	ATT_2-OUT	Audio output from 1dB-STEP ATTENUATOR (R-ch), 10 levels (0~-9dB)
32	I	ATT_2-IN	Audio input to 1dB-STEP ATTENUATOR (R-ch)
33		A-GND	Analog ground (R-ch)
34	I	ATT_1-IN	Audio input to 10dB-STEP ATTENUATOR (R-ch)
35	O	ATT_1-OUT	Audio output from 10dB-STEP ATTENUATOR (R-ch), 8 levels (0~-70dB)
36		LD_2	Time constant CR connecting terminal 2 for LOUDNESS CONTROL (R-ch)
37		LD_1	Time constant CR connecting terminal 1 for LOUDNESS CONTROL (R-ch)
38	I	V_{DD}	Power-supply voltage input pin
39	I	V_{DD}	Connects to pin 38.
40		V_{SS}	Normally grounded. In case of Dual-power-supply system, connectes to negative one.
41		LD_1	Time constant CR connecting terminal 1 for LOUDNESS CONTROL (L-ch)
42		LD_2	Time constant CR connecting terminal 2 for LOUDNESS CONTROL (L-ch)
43	O	ATT_1-OUT	Audio output from 10dB-STEP ATTENUATOR (L-ch), 8 levels (0~-70dB)
44	I	ATT_1-IN	Audio input to 10dB-STEP ATTENUATOR (L-ch)

IC601 DISPLAY- AND KEY-CONTROL MICROCOMPUTER μPD75104:

Pin No.	I/O	Name	Function
1 to 6			Not used.
7	I	$\overline{\text{RESET}}$	Initializes the processor with "L" level input.
8		X2	A X'tal oscillator is connected, and generates 4.19MHz clock pulses.
9		X1	
10 to 21			Not used.
22	O	LCD D	LCD serial data output pin
23	O	LCD C	LCD timing clock output pin
24	O	LCD E	LCD enable-signal output pin
25	O	$\overline{\text{DINH}}$	Display-inhibit-signal output pin
26		V_{SS}	Ground
27		TEST 4	Mode-set test, normally grounded (not active)
28		TEST 2	
29		TEST 1	Command test, normally grounded (not active)
30		TEST 0	LCD segment test. With "H" level, all segments are on.
31	I	$\overline{\text{EJECT}}$	Eject-key-signal input pin
32, 33			Not used.
34	I	RM	Remote control input pin. Pulled up to "H" level.
35	I	DSL I	Data-select signal input. Grounded.
36	I	$\overline{\text{M}}$/S	Command micom switching. Grounded to select the main one.
37	O	BEEP	Beep-control signal output pin
38		DK SIG	Not used.
39	O	DSL	Data-select signal output pin
40	O	KEO	Not used.
41	I	SI	Serial data input pin
42	I	KEI	Key-enable signal input pin
43	I	$\overline{\text{SCK}}$	Serial clock input pin
44		NC	Not used.
45	O	CMCO	Command clock output pin
46	O	CMDO	Command data output pin
47	O	KS5	Key-matrix signal output pins, low active
48	O	KS4	
49	O	KS3	
50	O	KS2	
51	O	KS1	
52	O	KS0	
53	I	KI3	Key-matrix signal input pins, low active (pulled up to "H")
54	I	KI2	
55	I	KI1	
56	I	KI0	
57		NC	Not used.
58		V_{DD}	Power-supply voltage input pin
59 to 64			Not used.

IC602 DECK- AND TUNER-CONTROL MICROCOMPUTER μPD75108

Pin No.	I/O	Name	Function
1	O	POWER	Power-control output pin
2	O	AMS	AMS-signal output pin
3	I	CD MUTE	CD-muting-signal input pin
4	I	CD C	CD-connecting-signal input pin
5	I	REMOTE IN	Aux input pin
6	I	AMS IN	AMS-signal input pin
7	I	RESET	Initializes the processor with low level input.
8		X2	A X'tal oscillator is connected to the pins, and generates 4.19 MHz clock pulses.
9		X1	
10	I	MTX0	Mode-matrix input pins
11	I	MTX1	
12	I	MTX2	
13	I	MTX3	
14	O	RADIO	Radio-power-signal output
15	O	PLL D	PLL-data output pin
16	O	PLL C	PLL-clock output pin
17	O	PLL S	PLL-data strobe signal output pin
18	O	AGC	AGC-signal output pin (AM)
19	O	LO/$\overline{DX}$	Local/DX switching. Loacal: high ("H")
20	O	SD SENS	SD sensitivity switching
21	O	MONO	Stereo/mono switching. Mono: high ("H")
22	O	REW PL	REW plunger-solenoid control signal output pin
23	O	FF PL	FF plunger-solenoid control signal output pin
24	O	DIR PL	DIR plunger-solenoid control signal output pin
25	O	MOTOR CONT	Motor control signal output pin
26		V_{SS}	Ground
27	I	END F	FWD reel-table-rotation-signal input pin
28	I	END R	REV reel-table-rotation-signal input pin
29	O	TO SW	Cassette-unloaded-signal input pin
30		NC	Not used
31	I	TI SW	Cassette-loaded-signal input pin
32	I	NOR/REV	Tape-direction-signal input. Normal: high ("H")
33		EDIS	Operation end detecting. System disables at low ("L").
34		ACC	Accessory-switch-off detection
35	I	DK	DK count input pin
36	I	BK	BK count input pin
37	I	SK	SK count input pin, low active.
38	I	SD	SD-signal input pin
39	I	ST	Stereo-signal input pin, low active.
40	I	POWER SW	Power-switch-on detection, low active
41	I	SI	Serial command-signal input pin
42	I	DSL	Data-select-signal input pin
43	I	SCK	Command-clock input pin, low active
44		BACK UP	Back-up-power detection, "H" to "L": SLEEP, "L" to "H": WAKE UP

Pin No.	I/O	Name	Function
45	O	SCO	Status-clock output pin
46	O	SDO	Status-data output pin
47	O	RC	System-reset-signal output pin
48	O	$\overline{\text{DK OUT}}$	DK-signal output pin, low active
49	O	$\overline{\text{OR OUT}}$	Out-run-signal output pin, low active
50	O	$\overline{\text{DECK}}$	MD-on-signal output pin, low active
51	O	MUTE	Muting-signal output pin
52	O	$\overline{\text{CD ON}}$	CD-on-signal output pin, low active
53	O	$\overline{\text{AUX}}$	AUX-on-signal output pin, low active
54	O	$\overline{\text{TUNER}}$	Tuner-on-signal output pin, low active
55	O	DOLBY B/$\overline{\text{C}}$	Dolby-B/C-selecting-signal output pin, C-type: low ("L")
56	O	$\overline{\text{DOLBY}}$	Dolby-on-signal output pin, low active
57		NC	Not used.
58	I	V_{DD}	Power-supply voltage input pin
59		ACC CONT	Not used.
60	O	VOL D	Volume-data output pin
61	O	VOL C	Volume-data clock output pin
62	O	VOL S	Volume-data strobe output pin
63			Not used.
64	O	TAPE	Tape-kind-selecting-signal output pin

SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

- Torque Measurement

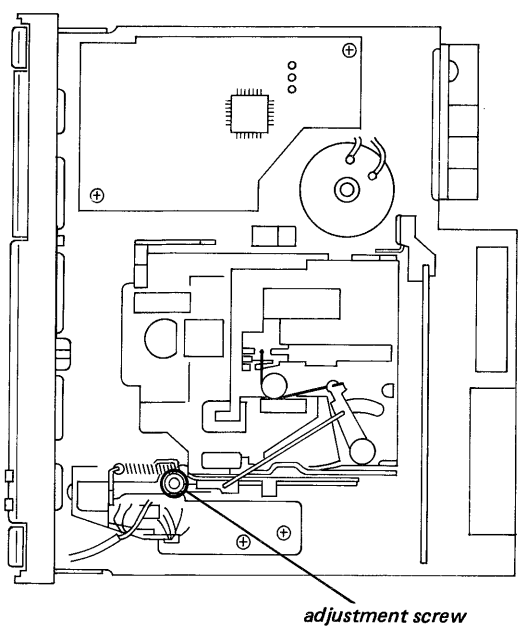
Mode	Torque Meter	Torque
FWD	CQ-102B	25 – 60 g•cm (0.35 – 0.84 oz•inch)
FF	CQ-201A	50 – 130 g•cm (0.7 – 1.82 oz•inch)
REW	CQ-201A	50 – 130 g•cm (0.7 – 1.82 oz•inch)
FWD back tension	CQ-102B	1 – 5 g•cm (0.014 – 0.07 oz•inch)

Note: The adjustment should be performed in the order given in this service manual.
The adjustments should be performed for both L-CH and R-CH.

- Power-supply voltage is +14.4V DC as per Ad Hoc recommendation.
- Switches and controls should be set as follows unless otherwise specified.

  LOUDNESS: OFF
  DOLBY NR: OFF
  METAL/LOCAL: OFF

Adjustment Location:

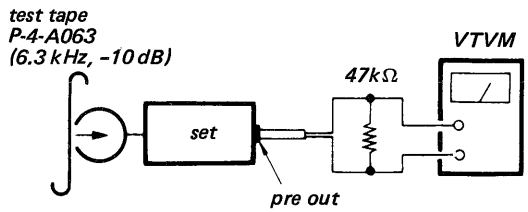


TAPE SECTION

Playback Head Azimuth Adjustment

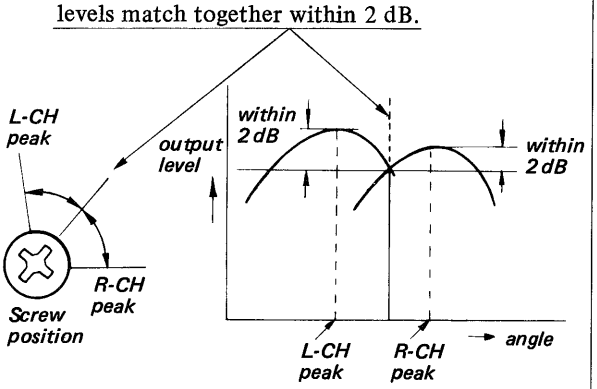
Procedure:

1. Mode: forward playback

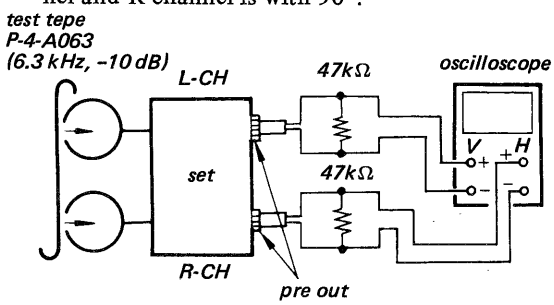


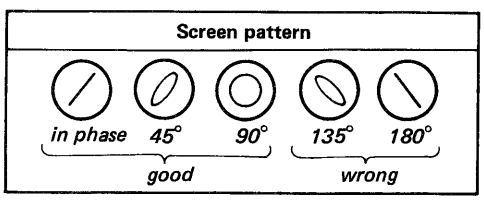
Adjust for forward (▶) direction and reverse (◀) direction.

2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw until both of output levels match together within 2 dB.



3. Phase Check
   Confirm that phase difference between L-channel and R-channel is with 90°.





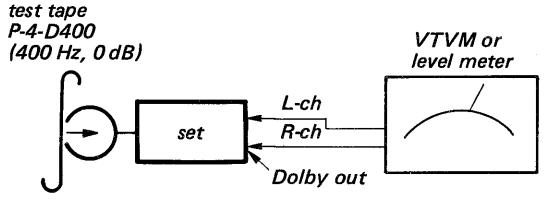
4. Repeat the above adjustment for reverse playback mode.
5. After the adjustment, lock the screw with locking compound.

3-2. ELECTRICAL ADJUSTMENTS

Dolby NR Level Adjustment

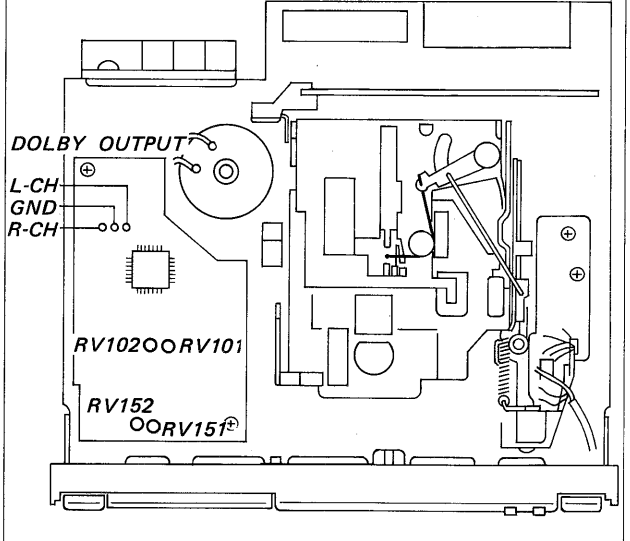
Setting:

Dolby NR Switch: OFF
Metal Switch: OFF



Procedures:

1. Playback the test tape P-4-D400 in normal forward direction mode.
2. Adjust RV102 (L-ch) and RV152 (R-ch) so that the Dolby output becomes in -4±0.3 dB.
3. Playback the test tape in the reverse forward mode.
4. Adjust RV101 (L-ch) and RV151 (R-ch) so that the Dolby output becomes in -4±0.3 dB. (-4±0.3 dB: approx. 0.51~0.47V)



See page 18.

REFERENCE

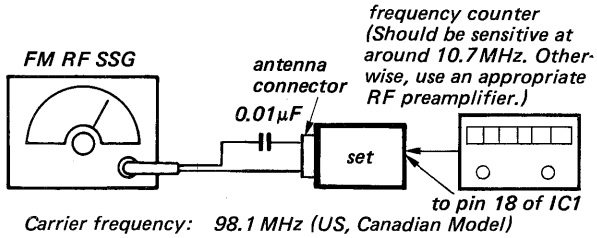
Tape End Detection Adjustment

FM SECTION

VCO Free-Run Adjustment

Setting:

Band switch: FM MONO
Frequency: 98.1 MHz (US, Canadian Model)
98.0 MHz (AEP, E Model)

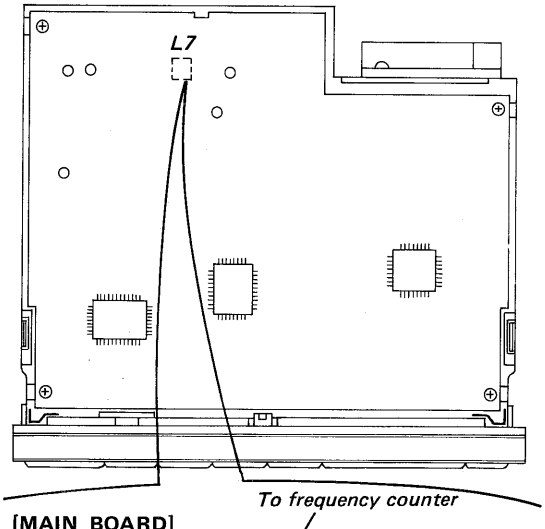


Carrier frequency: *98.1 MHz (US, Canadian Model)*
98.0 MHz (AEP, E Model)
Output level: *less than -20 dB*
Modulation: *no modulation*

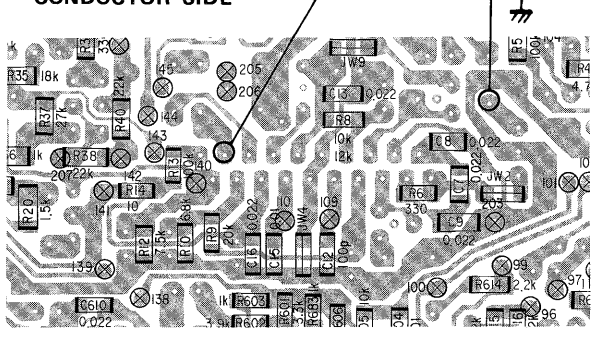
Procedures:

1. Ground the junction of CF1 and CF2.
2. Adjust the core of L7 on the component side so that the reading of the frequency counter becomes in from 10.690 to 10.700 MHz.
3. Remove the grounding at the junction of CF1 and CF2.

MAIN BOARD CONDUCTOR SIDE VIEW



[MAIN BOARD]
CONDUCTOR SIDE

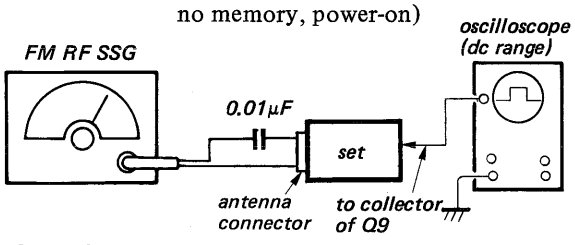


The FM front-end is carefully adjusted at the factory and is supplied as one whole block for replacement.

SD Center-Frequency Adjustment

Setting:

Band switch: FM MONO
Frequency: 87.9 MHz (Initial frequency, no memory, power-on)

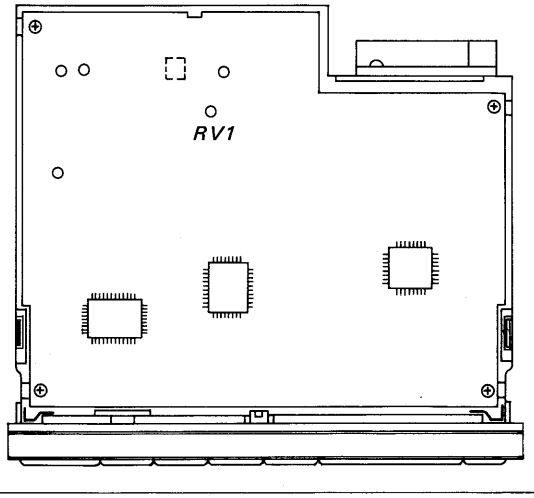


Carrier frequency: *87.855 MHz*
Output level: *60 dB (1 mV)*
Modulation: *no modulation*

Procedures:

1. Tune the set to 87.9 MHz.
2. Adjust RV1 to obtain the position where the oscilloscope voltage reading just changes from low to high.
3. Decrease the frequency of the SSG so that the voltage reading just changes from high to low.
4. Increase the frequency of the SSG by 1 kHz step and confirm that the frequency at which the voltage reading changes to high again becomes in 87.855 MHz $^{+5}_{-2}$ kHz.
5. Increase the frequency of the SSG until the voltage reading just changes to low again.
6. Decrease the frequency of the SSG by 1 kHz step and confirm that the frequency at which the voltage reading just changes to high again becomes in 87.930 MHz $^{+10}_{-5}$ kHz (US, Canadian Model) or 87.924 MHz ±6 kHz (AEP, E Model).

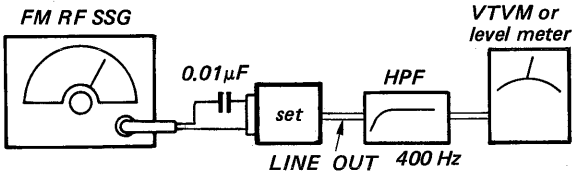
MAIN BOARD CONDUCTOR SIDE VIEW



Soft-Muting Adjustment

Setting:

Band switch: FM MONO
Frequency: 97.9 MHz
The bottom plate and the short black grounding lead wire of the cable assembly should be firmly installed on the chassis.

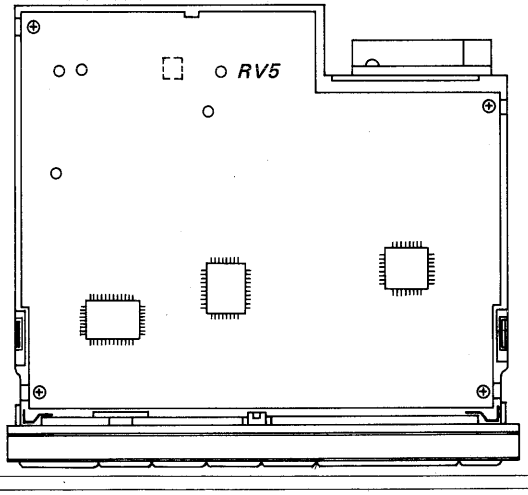


Carrier frequency: *97.9 MHz*
Modulation: *400 Hz, 22.5 kHz deviation (30%)*
Output level: *60 dB (1 mV)*

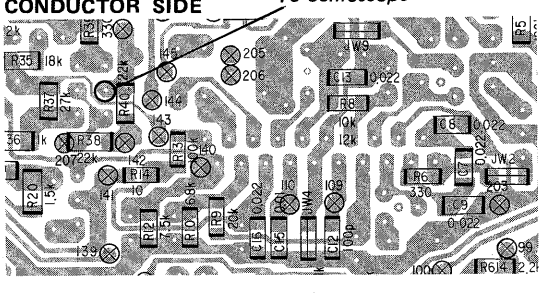
Procedures:

1. Adjust VOL LEVEL so that the LINE OUT level becomes in 0 dB.
2. Reduce the output level of the SSG down to less than 0 dB (1μV).
3. Adjust RV5 on the component side so that the LINE OUT level becomes in −5 dB ± 2 dB (0.436 V ± 2 dB).

MAIN BOARD CONDUCTOR SIDE VIEW



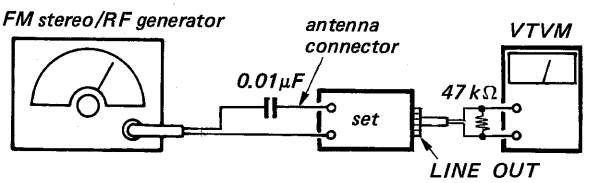
[MAIN BOARD]
CONDUCTOR SIDE



FM Stereo Separation Adjustment

Setting:

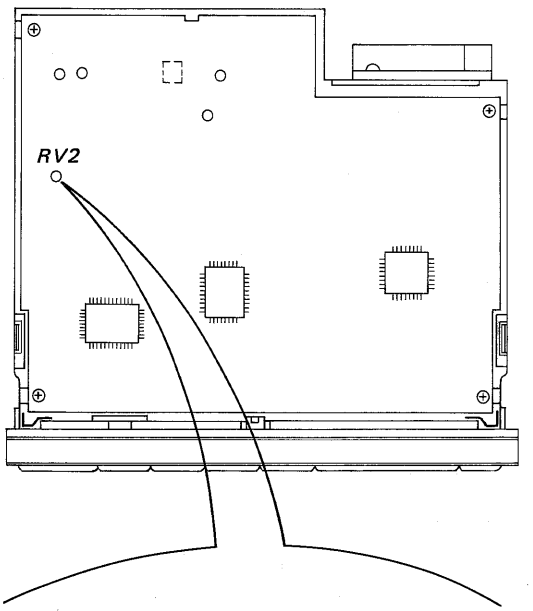
BAND: FM Stereo
Frequency: 97.9 MHz



Carrier frequency: *97.9 MHz*
Output level: *60 dB (1 mV)*
Modulation: *main: 1 kHz, 33.75 kHz deviation*
sub: 1 kHz, 33.75 kHz deviation
19 kHz pilot: 7.5 kHz deviation

Adjustment Location: Mother board

MAIN BOARD CONDUCTOR SIDE VIEW



Porcedure:

1. Adjust RV2 for a best stereo separation at a LINE OUT level of approximately 0 dB.
   More than 35 dB is good.

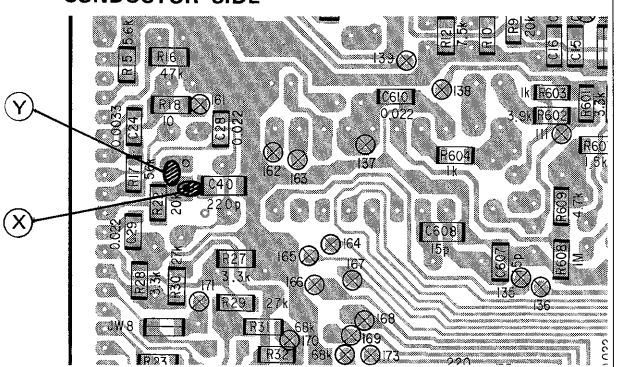
FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV2 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV2 for minimum reading.

   L-CH Stereo separation: Ⓐ – Ⓑ
   R-CH Stereo separation: Ⓒ – Ⓓ
   The separations of both channels shoul be equal.

2. If the result is not enough, make a solder bridge at Ⓧ position and step back to procedure 1.

3. If the result is still not good even with the bridge Ⓧ, make one at Ⓨ position in place of Ⓧ and step to procedure 1. again.

[MAIN BOARD] CONDUCTOR SIDE

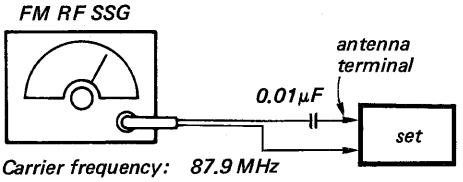


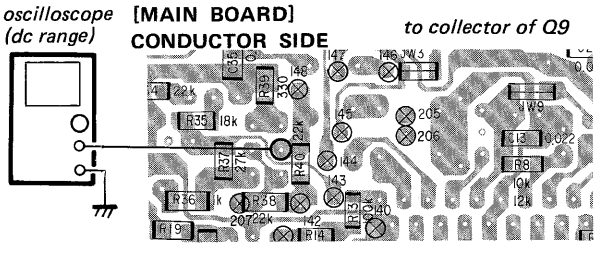
AM SECTION

FM Seek Stop Level Adjustment

Setting:

Band switch: FM MONO
Frequency: 87.9 MHz



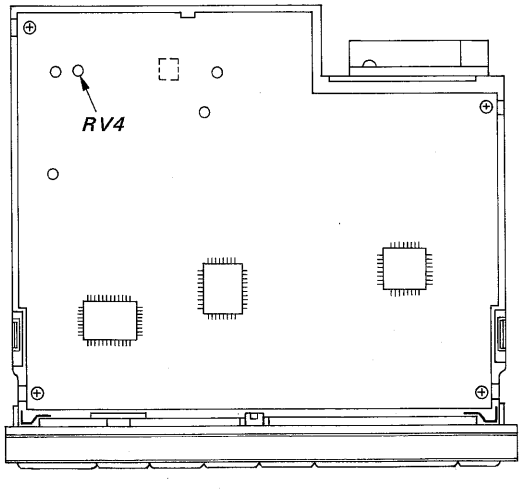


Procedure:

1. Tune the set to 87.9 MHz.
2. Adjust RV4 to the point where the VOM reading changes from low to high.
3. Confirm that the set stops auto-scanning with FM RF SSG output level set at 28 ±3 dB.

Adjustment Location: Mother board

MAIN BOARD CONDUCTOR SIDE VIEW

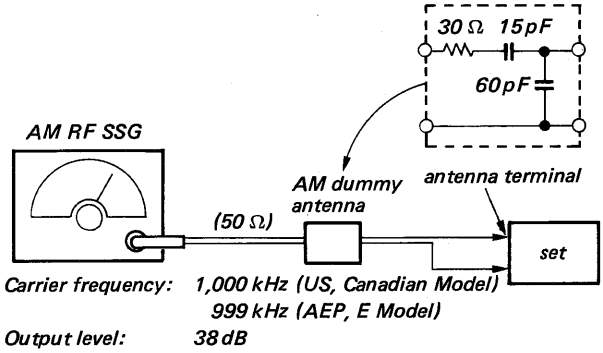


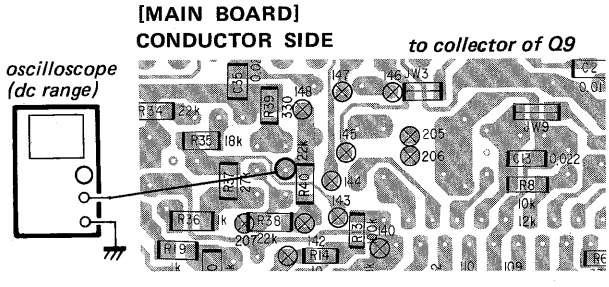
AM Seek Stop Level Adjustment

Be sure to perform this adjustment after "FM Seek Stop Adjustment".

Setting:

Band: AM
Frequency: 1,000 kHz (US, Canadian Model)
999 kHz (AEP, E Model)



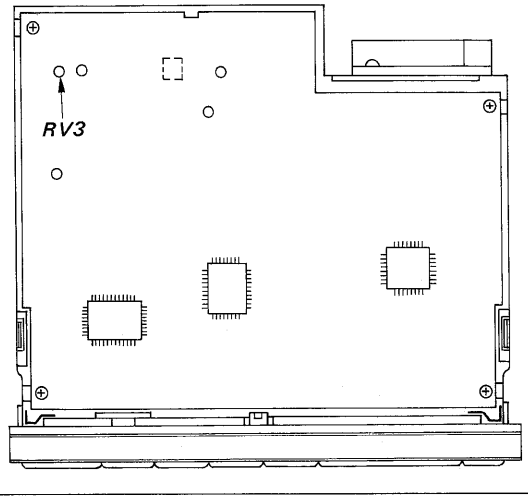


Procedure:

1. Tune the set to the frequencies.
2. Adjust RV3 to the point where the VOM reading just changes from low to high.
3. Confirm that the set stops auto-scanning with AM RF SSG output level set at 38 ±3 dB.

Adjustment Location: Motherboard

MAIN BOARD CONDUCTOR SIDE VIEW



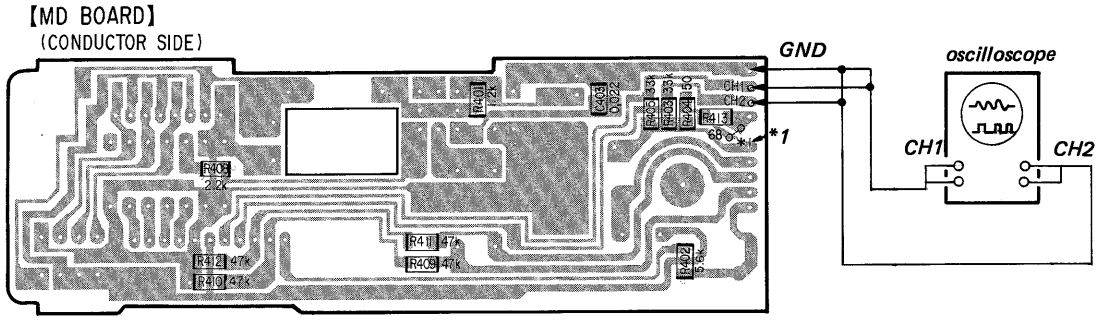
REFERENCE

Tape End Detection Adjustment

Checking the output voltages from the photo interrupters (PH401, PH402).

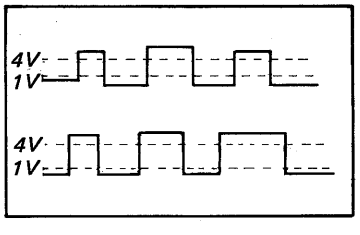
Test tape: *C-60 (or any)*

Setting: *FF or REW*



Procedures:

1. Confirm that the both voltages of CH1 and CH2 are more than 4 V at their high level and less than 1 V at their lower level.
2. If the specification above is not satisfied make a solder bridge at the portion of the pattern marked with *1 on MD BOARD, and confirm that the specifcation of Procedure 1 is satisfied.

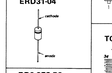


SECTION 4
DIAGRAMS

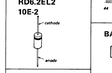
• SEMICONDUCTOR LEAD LAYOUTS

RD3.9ES-B2
RD4.3ES-B2
RD5.6ES-B2
RD5.6ES-T1B2
RD9.1ES-B2
1SS119
1SS133T-77

ERD31-04



RD6.2ES-B2
RD6.2EL2
10E-2



LN1451C

M5228FP
M54516P

M5246FP
μPD4050BG
μPD4052BG
LM7001

TC9188F

BA338

TA7250BP
TA7251BP

CXA1097Q

μPC4558G2

μPD75104G-530
μPD75108G-549

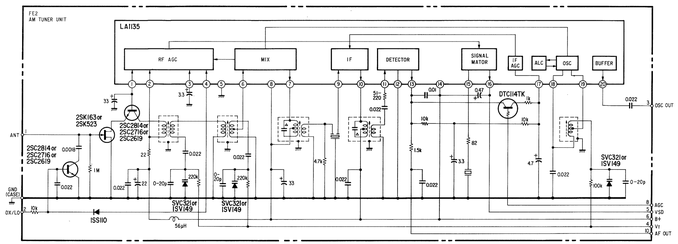
M51690L

DTA114ES
DTC114ES
DTC144ES
2SA1048-GR
2SC634SP
2SD1012

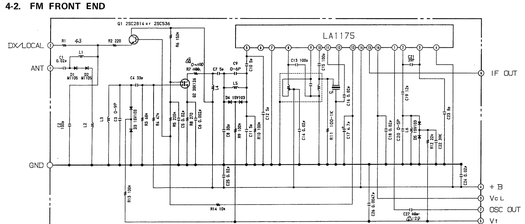
2SD1802

2SA881
2SB822
2SD1055

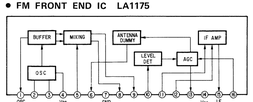
4-1. AM FRONT END



4-2. FM FRONT END

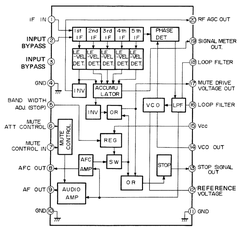


• FM FRONT END IC LA1175

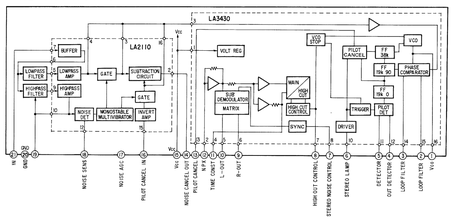


4-3. IC BLOCK DIAGRAMS

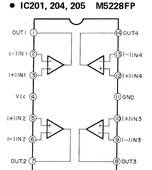
• IC1 M51690L



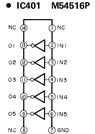
• IC2 STK3400 (75US)



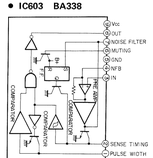
• IC201, 204, 205 M5228FP



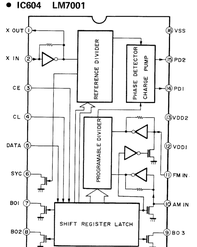
• IC401 M54516P



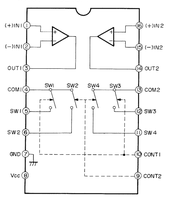
• IC603 BA338



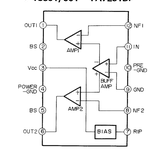
• IC604 LM7001



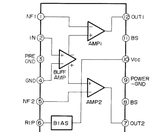
• IC101 M5246FP



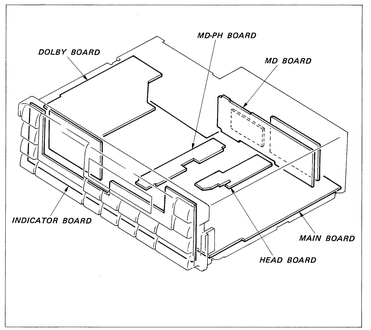
• IC801, 901 TA7251BP



• IC851, 951 TA7250BP



4-4. CIRCUIT BOARDS LOCATION



4-5. MOUNTING DIAGRAM

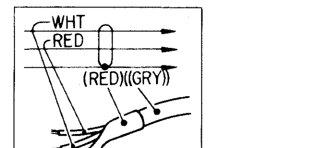
—Main Board—

• SEMICONDUCTOR LOCATIONS

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D1	C-18	D612	C-12	Q8	C-18
D2	E-19	D613	D-11	Q9	C-18
D3	B-18	D614	G-13	Q201	G-11
D4	C-19	D615	D-14	Q202	D-11
D201	G-12	D616	G-17	Q203	D-12
D301	G-13	D617	D-15	Q301	G-11
D501	E-27	D618	C-14	Q302	D-14
D502	E-28	D619	E-18	Q303	D-14
D503	E-29	D620	E-18	Q601	D-17
D504	E-30	D621	E-18	Q602	D-17
D505	F-30	D622	E-18	Q603	D-17
D506	F-30	D623	F-18	Q604	D-17
D507	G-30	D624	F-15	Q605	D-16
D508	F-26	D625	C-13	Q606	C-13
D509	E-26	D626	C-15	Q607	C-13
D510	F-25	D627	D-15	Q608	D-12
D511	E-25			Q609	D-16
D512	F-24	IC1	C-17	Q610	D-16
D513	E-24	IC2	D-19	Q611	C-14
D514	F-23	IC201	G-6	Q612	D-14
D515	E-23	IC202	G-8	Q613	H-16
D516	F-23	IC203	F-8	Q614	C-14
D517	E-23	IC204	F-9	Q615	C-13
D518	F-22	IC205	F-7	Q616	C-13
D519	E-22	IC206	D-8	Q618	G-17
D520	G-22	IC601	G-3	Q619	D-15
D521	F-22	IC602	F-5	Q620	D-15
D601	D-16	IC603	G-13	Q621	D-16
D602	C-12	IC604	D-18	Q622	F-19
D603	D-15	IC605	E-3	Q623	F-19
D604	D-14			Q624	F-19
D605	D-14	Q1	B-15	Q625	C-15
D606	C-15	Q2	C-15	Q626	C-15
D607	C-15	Q3	B-15	Q627	D-15
D608	D-15	Q4	C-18	Q628	F-15
D609	F-15	Q5	F-19	Q629	F-15
D610	F-17	Q6	B-19	Q630	G-17
D611	F-17	Q7	B-18		

Note:

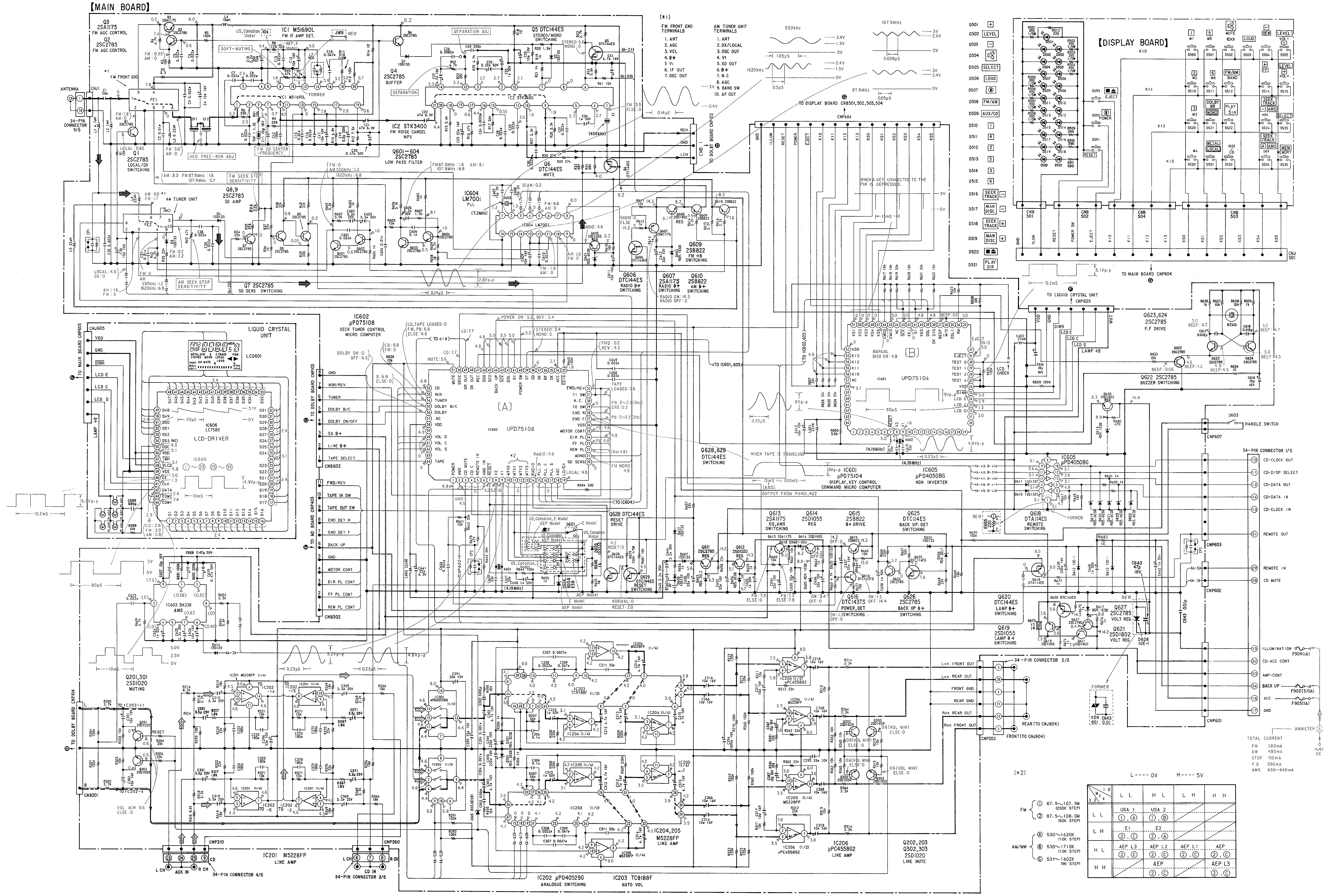
- Color code of sleeving over the end of the jacket.



- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- ▲ : nonflammable resistor.
- ⊗ : Through hole.
- ░ : component-side pattern.

4-6. SCHEMATIC DIAGRAM

—Main Baord—



Note:

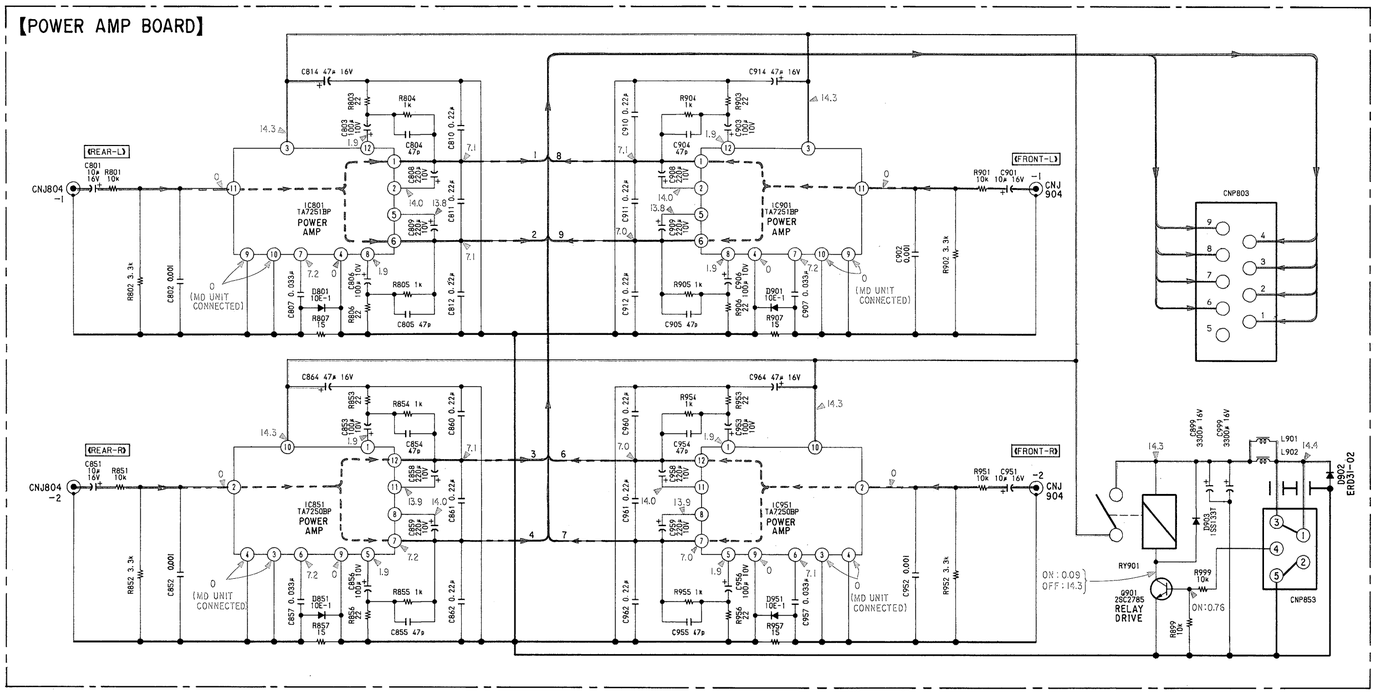
- All capacitors are in μF unless otherwise noted. pF: $\mu\mu$F 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and $1/4$W or less unless otherwise specified.
- ⟶: FM signal path.
- – – ⟶: FM L-CH signal path
- –·–·⟶: FM R-CH signal path
- ➡: AM signal path.
- ⇨: AUX signal path.
- : nonflammable resistor.
- : B+ bus.
- : adjustment for repair.
- Total current is measured with no cassette installed.
- Power voltage is 14.4 V and fed with regulated dc power supply from BACK UP and ACC terminal.
  No Mark: FM or AM
  < > : TAPE
- Waveforms are taken to ground in no-signal mode by using oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- Switches:

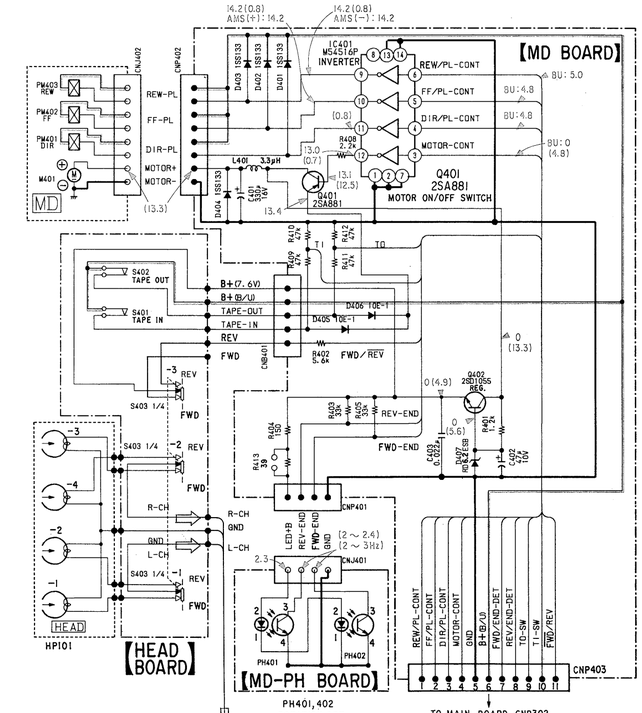
Ref. No.	Switch	Position
S500	1	OFF
S501	5	OFF
S502	(MUTING)	OFF
S503	LOUD	OFF
S504	MAN DISC –	OFF
S505	LEVEL –	OFF
S510	2	OFF
S511	6	OFF
S512	FM/AM	FM
S514	MAN DISC +	OFF
S515	LEVEL +	OFF
S520	3	OFF
S521	DOLBY NR	OFF
S522	PLAY DIR	OFF
S524	SEEK TRACK AMS –	OFF
S525	SELECT	OFF
S530	4	OFF
S531	METAL	OFF
S532	AUX/CD	OFF
S534	SEEK TRACK AMS +	OFF
S535	MEM	OFF
S591	RESET	OFF
S592	(POWER)	OFF
S593	(EJECT)	OFF
S603	(HANDLE)	OFF
S601 (E Model)	10 k/9 k	10 k

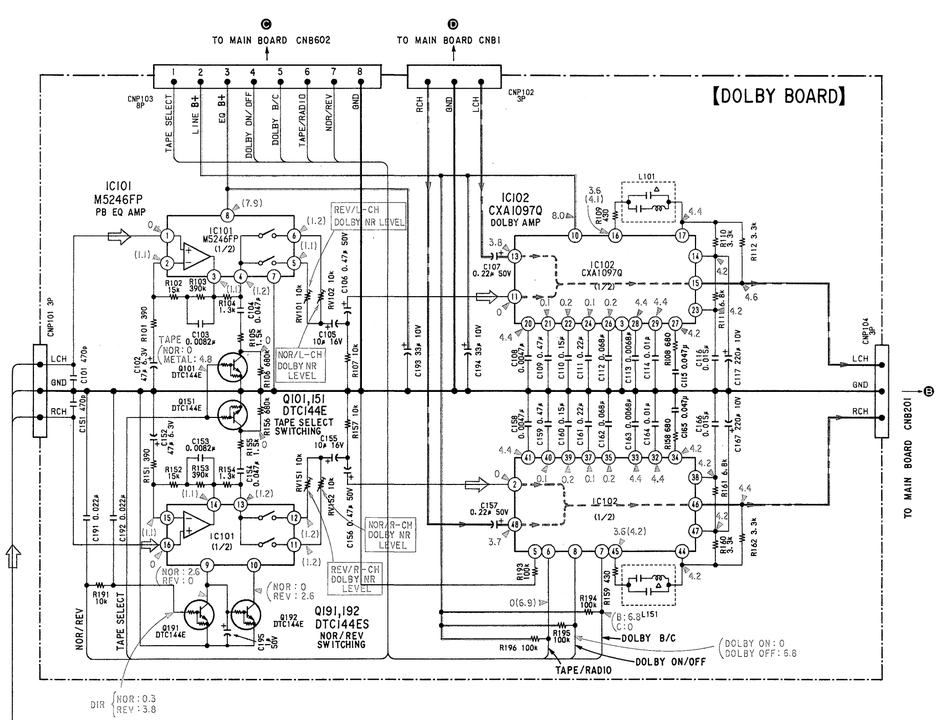
4-7. SCHEMATIC DIAGRAM

—Power Amp Board—

【POWER AMP BOARD】







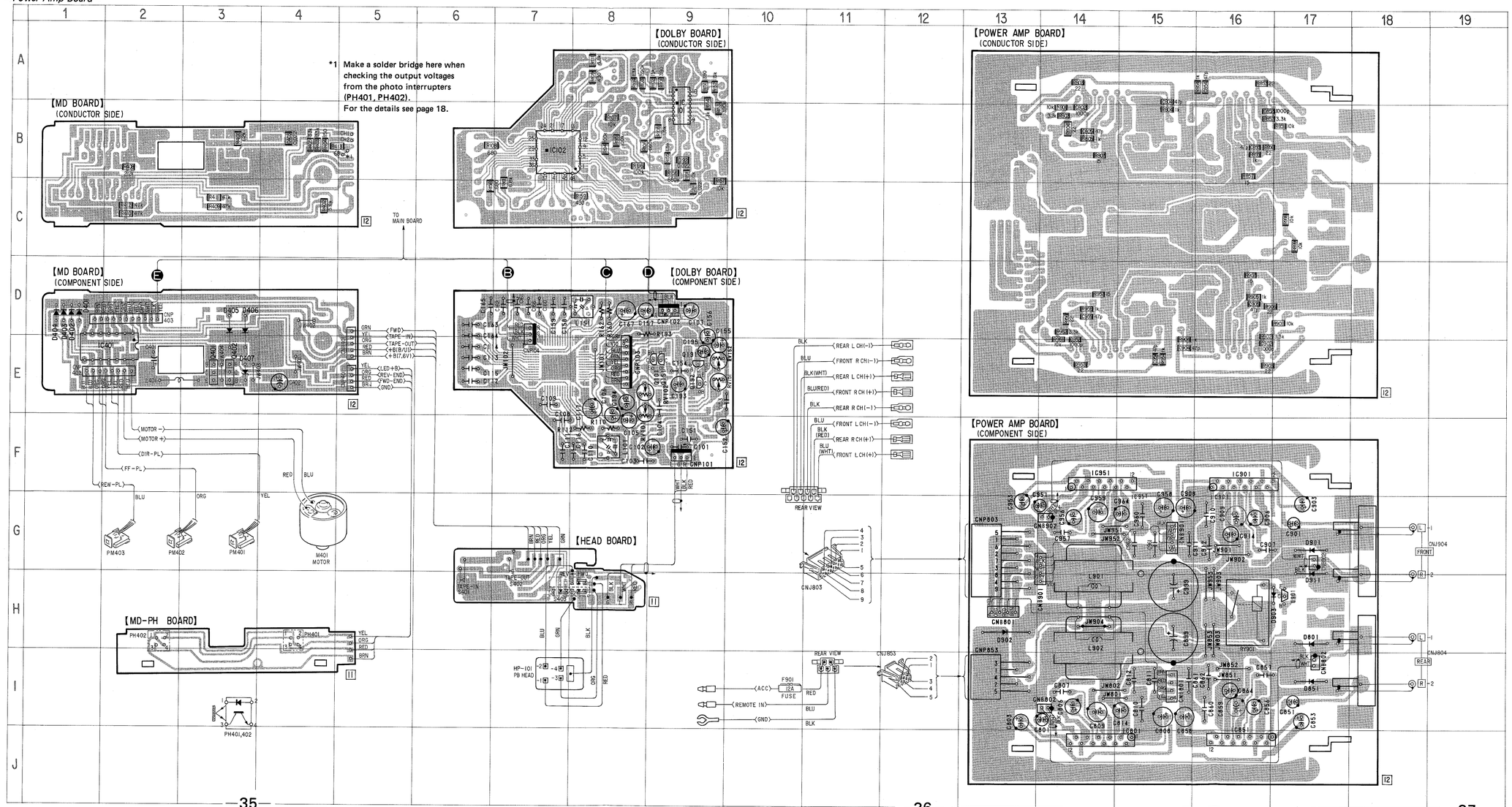
Note:

- All capacitors are in μF unless otherwise noted. pF: μF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- ⟶: FM signal path.
- ⟶: FM L-CH signal path
- ⟶: FM R-CH signal path
- ⇨: TAPE PLAYBACK signal path.
- ▭: nonflammable resistor.
- ⏦: B+ bus.
- Total current is measured with no cassette installed.
- Power voltage is 14.4 V and fed with regulated dc power supply from BACK UP and ACC terminal.
  No Mark: FM or AM
  ( ) : AUX (When applying 14.4 V to REMOTE IN terminal.)
  < > : TAPE
  (( )) : AMS
- Waveforms are taken to ground in no-signal mode by using oscilloscope.
  Voltage variations may be noted due to normal production tolerances.
- **Switches:**

Ref. No.	Switch	Position
S401	TAPE-IN	OFF
S402	TAPE-OUT	OFF
S403	FWD/REV	FWD

4-8. MOUNTING DIAGRAM

—Power Amp Board—

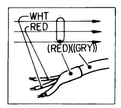


● SEMICONDUCTOR LOCATIONS

Ref. No.	Location	Ref. No.	Location
D401	D-1	IC401	E-2
D402	D-1	IC801	J-15
D403	D-1	IC851	J-16
D404	D-1	IC901	F-16
D405	D-3	IC951	F-14
D406	D-3		
D407	E-3	PH401	H-4
D801	H-17	PH402	H-2
D851	H-17		
D901	G-17	Q101	E-9
D902	H-13	Q151	E-9
D903	H-17	Q191	E-9
D951	H-17	Q192	E-9
		Q401	E-3
IC101	B-9	Q402	E-3
IC102	B-7	Q901	H-17

Note:

- Color code of sleeving over the end of the jacket.



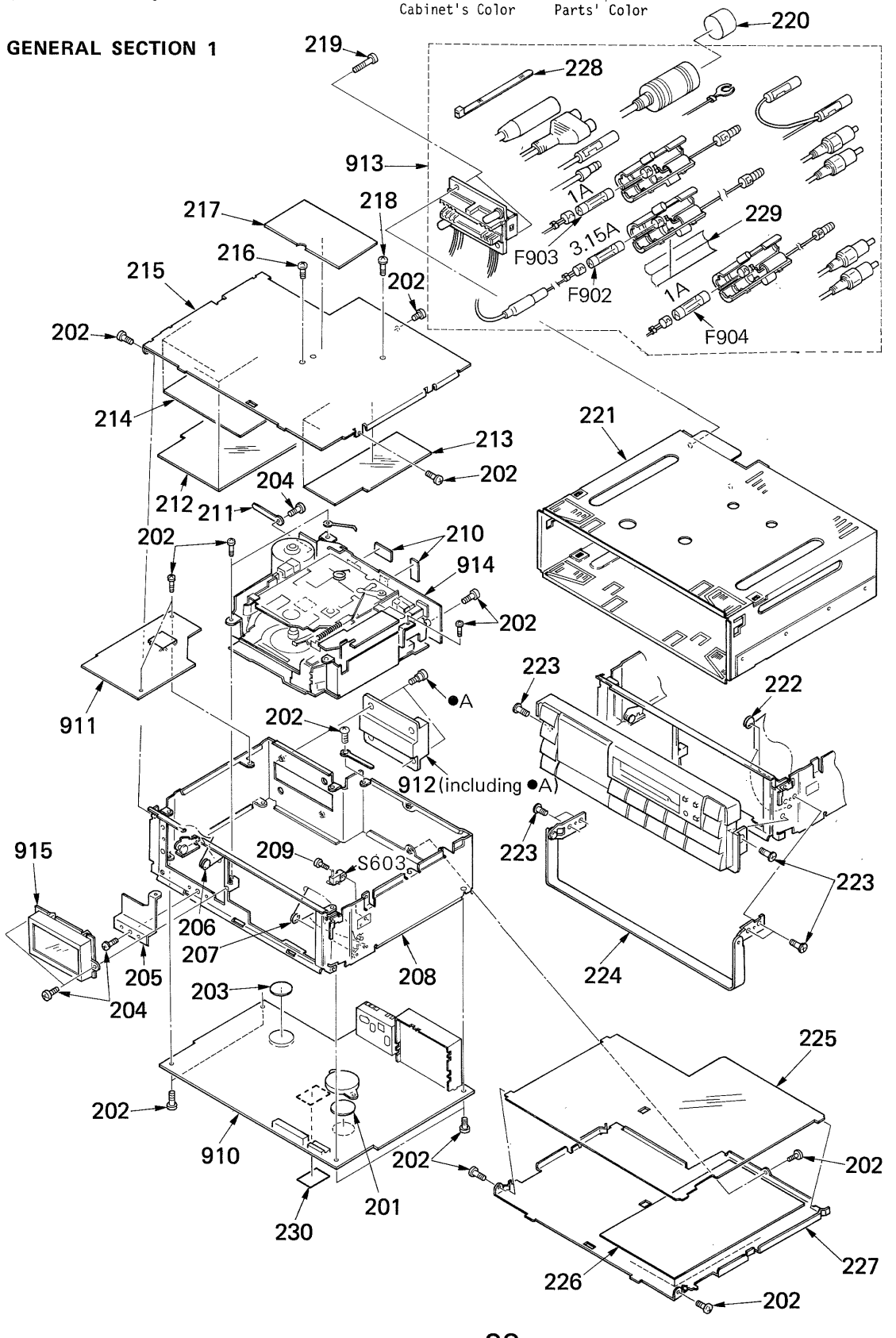
- ○— : parts extracted from the component side.
- ●— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.

SECTION 5
EXPLODED VIEWS AND PARTS LIST

NOTE:

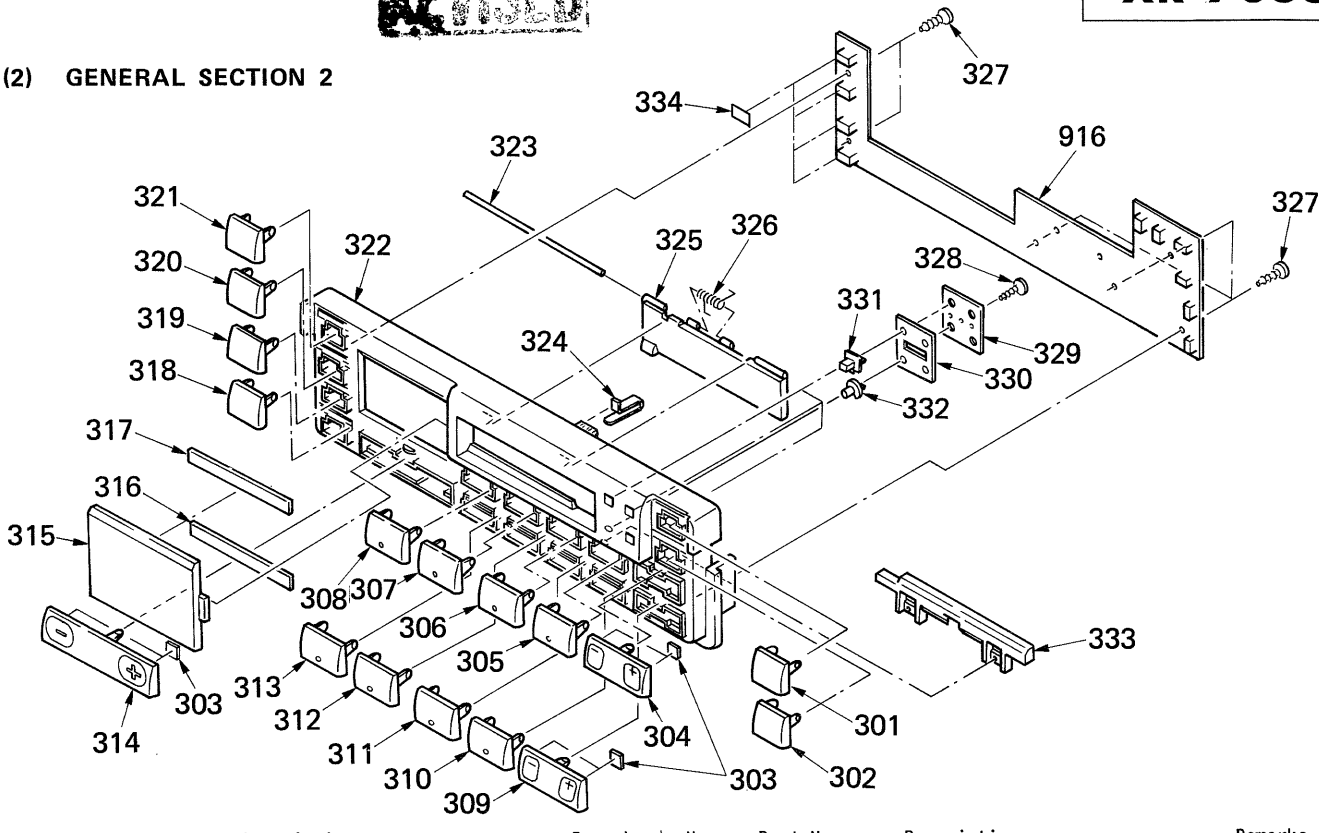
- The mechanical parts with no reference number in the exploded views are not supplied.
- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Color Indication of Appearance Parts
  Example: (RED) ..... KNOB, BALANCE (WHITE)
  (RED) = Cabinet's Color; (WHITE) = Parts' Color

(1) GENERAL SECTION 1



REVISED

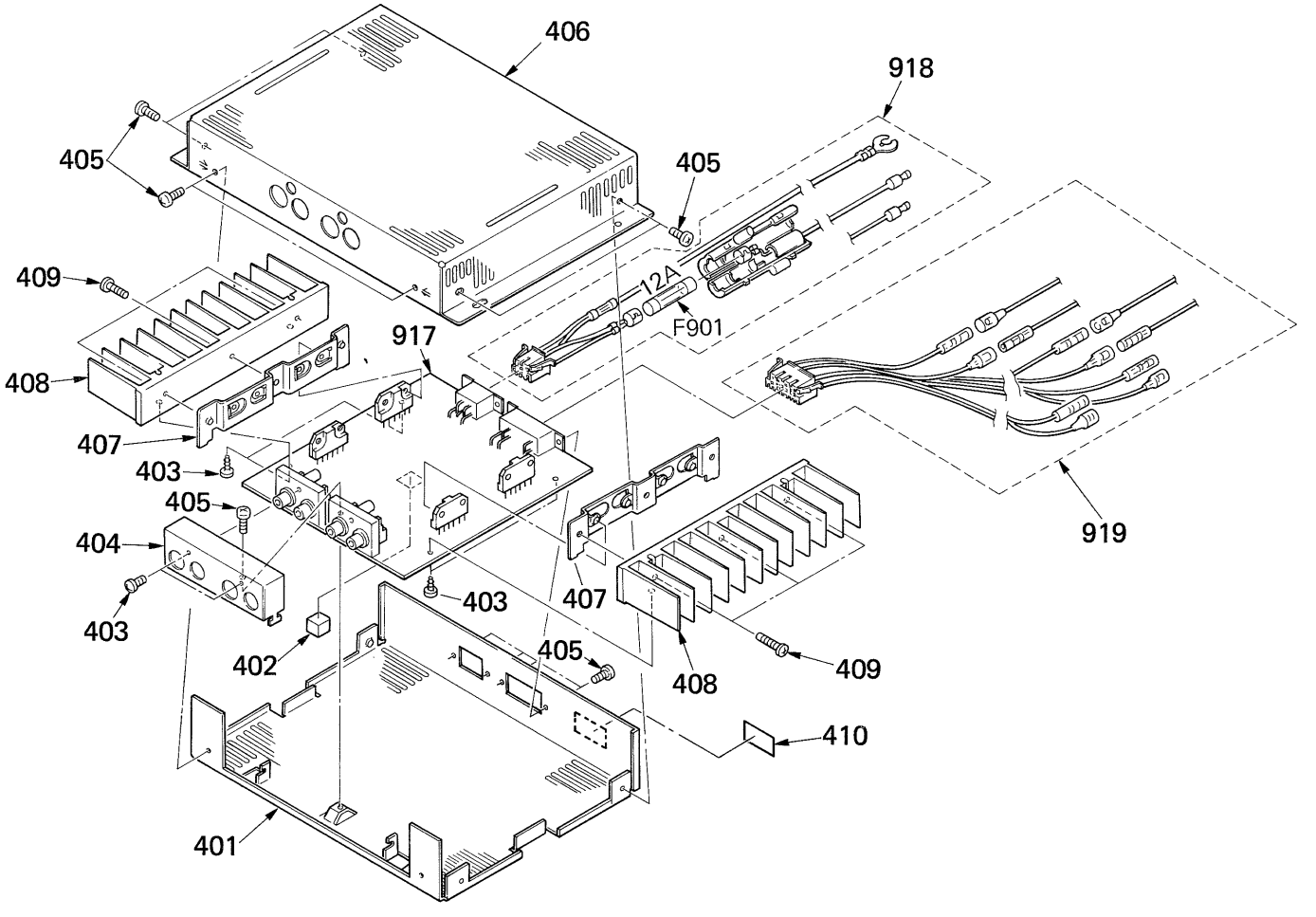
(2) GENERAL SECTION 2



No.	Part No.	Description	Remarks
301	3-342-229-01	BUTTON (D)	
302	3-342-230-01	BUTTON (E)	
303	3-342-205-01	CUSHION (B), BUTTON	
304	3-342-231-01	BUTTON (F)	
305	3-342-233-21	BUTTON (H,H)	
306	3-342-233-11	BUTTON (H,H)	
307	3-342-233-01	BUTTON (H,H)	
308	3-342-235-11	BUTTON (I)	
309	3-342-232-01	BUTTON (G)	
310	3-342-233-51	BUTTON (H,H)	
311	3-342-233-41	BUTTON (H,H)	
312	3-342-233-31	BUTTON (H,H)	
313	3-342-235-01	BUTTON (I)	
314	3-342-236-01	BUTTON (J)	
315	3-342-214-01	PLATE, ORNAMENTAL	
316	*3-342-218-01	SHEET (B), ADHESIVE	
317	*3-342-219-01	SHEET (A), ADHESIVE	
318	3-342-228-01	BUTTON (C)	
319	3-342-227-11	BUTTON (B)	
320	3-342-227-01	BUTTON (B)	
321	3-342-226-01	BUTTON (A)	
322	3-342-249-01	PIECE, NOSE	
323	3-325-708-01	SHAFT, CASSETTE DOOR	
324	3-342-206-01	SPRING	
325	A-3243-194-A	DOOR ASSY, CASSETTE	
326	3-342-222-01	SPRING	
327	7-685-104-19	SCREW +P 2X6 TYPE2 NON-SLIT	
328	7-685-103-19	SCREW +P 2X5 TYPE2 NON-SLIT	
329	*3-342-217-01	RETAINER, CUSHION	
330	3-342-220-01	CUSHION (A), BUTTON	
331	3-342-216-01	BUTTON (K)	
332	3-342-215-01	BUTTON, RESET	
333	3-342-240-01	ILLUMINATOR (A)	
334	*3-322-226-21	CUSHION	
916	*1-623-445-11	PC BOARD, INDICATION	

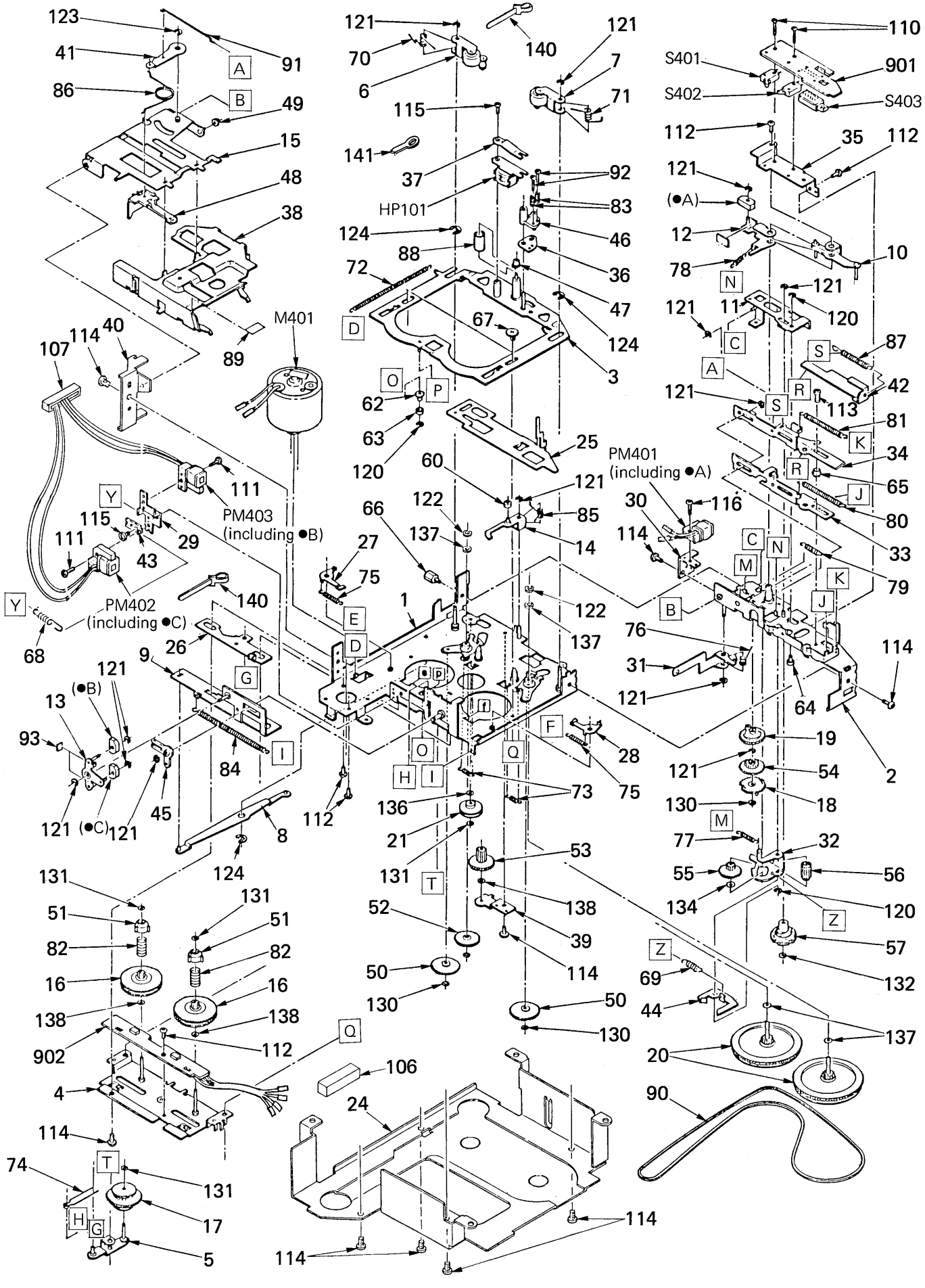
No.	Part No.	Description	Remarks
201	9-911-839-XX	CUSHION, FIXED	
202	7-685-791-04	SCREW +PTT 2.6X5 (S)	
203	3-896-343-01	SHEET, INSULATING	
204	7-685-780-04	SCREW +PTT 2X3 (S)	
205	*3-342-204-01	BRACKET, PC BOARD	
206	3-342-202-01	SPRING	
207	3-342-202-11	SPRING	
208	*X-3325-709-1	CHASSIS ASSY, MAIN	
209	7-621-255-45	SCREW +P 2X6	
210	3-846-067-11	SPACER (C)	
211	*2-277-426-01	CLAMP	
212	3-329-534-03	SHEET (B), INSULATING	
213	3-329-534-03	SHEET (C), INSULATING	
214	*3-332-169-01	LABEL	
215	*3-342-245-01	LID, UPPER	
216	3-325-739-01	SCREW, STEP	
217	*3-332-157-01	(US).....LABEL, MODEL NUMBER	
	*3-332-158-01	(Canadian)...LABEL, MODEL NUMBER	
	*3-332-159-01	(E).....LABEL, MODEL NUMBER	
	*3-332-160-01	(AEP).....LABEL, MODEL NUMBER	
218	3-327-110-01	SCREW, STOPPER	
219	7-682-151-01	SCREW +P 3X14	
220	3-566-347-01	COVER (A), CONNECTOR	
221	*X-3325-708-1	BRACKET ASSY	
222	3-342-203-02	SPRING	
223	7-621-662-10	SCREW +RK 2.6X5 BZn-N	
224	X-3325-707-1	HANDLE ASSY	
225	3-329-534-03	SHEET (A), INSULATING	
226	*3-332-196-01	LABEL, CONNECTOR	
227	*3-342-244-02	LID, LOWER	
228	3-671-893-01	CLAMP (LOW TYPE)	
229	*3-326-008-11	LABEL, CAUTION	
230	*3-324-384-01	CUSHION	
910	*A-3216-267-A	(US,Canadian)...MOUNTED PCB, MAIN	
	*A-3216-357-A	(AEP,E).....MOUNTED PCB, MAIN	
911	*A-3216-268-A	MOUNTED PCB, DOLBY	
912	*1-559-198-11	CORD (WITH CONNECTOR)	
913	*1-559-199-12	CORD (WITH CONNECTOR)	
914	*1-623-447-11	PC BOARD, MD	
915	1-807-833-11	CRYSTAL UNIT, LIQUID (Including,PL601-605,C699,IC606,R699)	
F902	1-532-419-00	FUSE (3.15)	
F903	1-532-360-XX	FUSE (1A)	
F904	1-532-360-XX	FUSE (1A)	
S603	1-570-771-11	SWITCH, HANDLE	

(3) POWER AMPLIFIER SECTION



No.	Part No.	Description	Remarks
401	*3-342-243-01	CASE (LOWER)	
402	9-911-841-XX	CUSHION (B)	
403	7-685-646-79	SCREW +P 3X8 TYPE2 SLIT	
404	*3-342-223-01	BRACKET, JACK	
405	7-682-147-01	SCREW +PTT 3X6 (S)	
406	*3-342-242-01	CASE (UPPER)	
407	*3-339-415-01	BRACKET, IC	
408	*3-342-225-01	HEAT SINK	
409	7-685-754-04	SCREW +PTT 3X12 (S)	
410	3-342-605-01	LABEL, SERIAL NUMBER	
917	*A-3216-271-A	MOUNTED PCB, POWER AMPLIFIER	
918	1-559-201-11	CORD (WITH CONNECTOR)	
919	1-559-200-11	CORD (WITH CONNECTOR)	
F901	1-532-678-11	FUSE, GLASS TUBE (12A)	

(4) TAPE TRANSPORT MECHANISM SECTION



REVISED

No.	Part No.	Description	Remarks
1	*3-596-504-01	CHASSIS ASSY, MAIN	
2	*3-596-547-01	CHASSIS ASSY, SUB	
3	3-596-507-01	PLATE ASSY, HEAD	
4	*3-596-541-01	BRACKET ASSY, REEL TABLE	
5	*3-596-539-01	ARM ASSY, FF	
6	3-596-521-01	ARM (F) ASSY, P.R	
7	3-596-523-01	ARM (R) ASSY, P.R	
8	*3-596-538-01	ARM ASSY, POWER	
9	*3-596-533-01	PLATE ASSY, MODE	
10	*3-596-574-01	ARM ASSY, SELECT	
11	*3-596-573-01	PLATE ASSY, POWER	
12	*3-596-575-01	ARM ASSY, CHIP	
13	*3-596-537-01	CRANK ASSY, T	
14	*3-596-508-01	ARM ASSY, TIMING	
15	3-596-581-01	ARM ASSY, HOUSING	
16	3-596-543-01	BUSHING ASSY (PH), REEL	
17	3-596-540-01	GEAR ASSY, FF	
18	3-596-550-01	GEAR ASSY, RVS	
19	3-596-548-01	GEAR ASSY, EJ	
20	3-596-546-01	FLYWHEEL ASSY	
21	3-596-531-01	PULLEY ASSY, TENSION	
24	*3-596-595-01	BRACKET, MD	
25	*3-596-506-01	PLATE, RVS	
26	*3-596-532-01	PLATE, FF	
27	*3-596-502-01	PLATE (F), BRAKE	
28	*3-596-503-01	PLATE (R), BRAKE	
29	3-596-588-01	BRACKET (AT), SOLENOID	
30	*3-596-578-01	BRACKET (B), SOLENOID	
31	*3-596-556-01	PLATE, TRIGGER	
32	3-596-551-01	TRIGGER, RVS	
33	*3-596-566-01	PLATE, EJ	
34	*3-596-569-01	PLATE (S), RESET	
35	*3-596-577-01	BRACKET, SWITCH	
36	3-596-516-01	SEAM, ADJUSTOR	
37	3-596-520-01	SPRING	
38	3-596-584-01	HOUSING, CASSETTE	
39	*3-596-529-01	GUIDE, SHAFT, GEAR	
40	*3-596-593-01	HOLDER, MD PC BOARD	
41	*3-596-564-01	PLATE, CENTER, OVER	
42	*3-596-571-01	PLATE, SLIDE	
43	3-596-587-01	CUSHION, SOLENOID	
44	3-596-590-01	ARM	
45	3-596-536-01	CRANK, FF	
46	*3-596-517-01	ARM, AZIMUTH	
47	3-596-515-01	ROLLER (C), H/P	
48	3-596-585-01	CATCHER	
49	3-596-561-01	ROLLER, H/A	
50	3-596-526-01	GEAR, IDLER	
51	3-596-545-01	SCREWDRIVER, REEL	
52	3-596-527-01	GEAR, DIA.15.2	
53	3-596-528-01	GEAR, INPUT	
54	3-596-549-01	GEAR (A)	
55	3-596-552-01	GEAR (B)	
56	3-596-553-01	GEAR (C)	
57	3-596-555-01	GEAR, MODE	
60	3-596-510-01	ROLLER, TIMING/A	
62	3-596-511-01	ROLLER (A), H/P	
63	3-596-512-01	ROLLER (B), H/P	
64	3-596-558-01	ROLLER, MODE	
65	3-596-568-01	SPACER	
66	*3-596-594-01	STUD (AMR), SPECIAL	
67	3-596-513-01	SCREW	
68	3-596-591-01	SPRING	
69	3-596-589-01	SPRING	
70	3-596-522-01	SPRING	
71	3-596-524-01	SPRING (R)	
72	3-596-514-01	SPRING	
73	3-596-530-01	SPRING	
74	3-596-525-01	ARM (SPG), FF	
75	3-596-505-01	SPRING	
76	3-596-557-01	SPRING	
77	3-596-554-01	SPRING	
78	3-596-576-01	SPRING	
79	3-596-559-01	SPRING	
80	3-596-567-01	SPRING	
81	3-596-570-01	SPRING	
82	3-596-544-01	SPRING	
83	3-596-518-01	LOCK (SPG), AZIMUTH	
84	3-596-535-01	SPRING	
85	3-596-509-01	SPRING	
86	3-596-565-01	REVERSE (SPG)	
87	3-596-572-01	SPRING	
88	7-635-006-69	TUBE	
89	3-831-441-11	CUSHION, CH	
90	3-596-582-01	BELT	
91	3-596-563-01	ROD, OVER CENTER	
92	3-596-519-01	SCREW, AZIMUTH	
93	3-596-598-01	SPACER (T)	
106	*1-563-959-11	HOUSING, CONNECTOR 4P	
107	*1-563-960-11	HOUSING, CONNECTOR 8P	
110	3-596-586-01	SCREW (M1.7X7)	
111	7-627-554-68	SCREW, PRECISION +P 2X5.5 TYPE1	
112	7-621-772-00	SCREW +B 2X3	
113	7-621-772-20	SCREW +B 2X5	
114	7-621-775-00	SCREW +B 2.6X3	
115	7-621-772-10	SCREW +B 2X4	
116	7-627-554-68	SCREW (M2X5)	
120	7-624-101-01	RING, RETAINING E-1.2	
121	7-624-102-04	RING, RETAINING E-1.5	
122	3-590-768-00	RING (A), E-1.6	
123	7-624-118-01	RING, RETAINING E-2.5	
124	7-624-106-04	RING, RETAINING E-3	
130	3-570-615-00	POLY-WASHER (DIA.1.2)	
131	3-701-436-11	WASHER, 1.6 (t=0.25)	
132	3-701-436-21	WASHER, POLYEHTHYLENE (t=0.5)	
134	3-701-437-11	WASHER (t=0.25)	
136	3-701-437-11	POLY-SLIDER 2.1X5Xt0.25	
137	3-590-770-31	POLY-SLIDER (A)(t=0.25)	
138	3-701-437-21	WASHER (t=0.5)	
140	*3-701-748-00	HOLDER, WIRE	
141	3-493-875-01	HOLDER, WIRE	
901	*1-623-414-11	PC BOARD, HEAD	
902	3-596-596-01	INTERRUPTER ASSY, PHOTO	
HP101	1-543-248-01	HEAD	
M401	3-596-592-01	MOTOR ASSY	
PM401	1-454-398-21	SOLENOID, PLUNGER (DIR)	
PM402	1-454-398-31	SOLENOID, PLUNGER (FF)	
PM403	1-454-398-41	SOLENOID, PLUNGER (REW)	
S401	1-570-249-11	SWITCH, LEAF (TAPE-IN)	
S402	1-570-250-11	SWITCH, LEAF (TAPE-OUT)	
S403	1-570-248-11	SWITCH, SLIDE	

SECTION 6
ELECTRICAL PARTS LIST

NOTE:

- Items marked " ★ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuitsin a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

ELECTRICAL PARTS

Ref.No.	Part No.	Description
901	*1-623-414-11	PC BOARD, HEAD
902	3-596-596-01	INTERRUPTER ASSY, PHOTO
910	*A-3216-267-A	(US,Canadian)...MOUNTED PCB, MAIN
	*A-3216-357-A	(AEP,E).....MOUNTED PCB, MAIN
911	*A-3216-268-A	MOUNTED PCB, DOLBY
912	*1-559-198-11	CORD (WITH CONNECTOR)
913	*1-559-199-12	CORD (WITH CONNECTOR)
914	*1-623-447-11	PC BOARD, MD
915	1-807-833-11	CRYSTAL UNIT, LIQUID (Including,PL601-605,C699,IC606,R699)
916	*1-623-445-11	PC BOARD, INDICATION
917	*A-3216-271-A	MOUNTED PCB, POWER AMPLIFIER
918	1-559-201-11	CORD (WITH CONNECTOR)
919	1-559-200-11	CORD (WITH CONNECTOR)
BT601	1-528-225-11	BATTERY, LITHIUM 3V
BZ601	*1-529-044-11	BUZZER, PIEZOELECTRIC

Ref.No.	Part No.	Description		
C1	1-163-175-00	CERAMIC MELF 56PF	5%	50V
C2	1-163-059-00	CERAMIC MELF 0.01MF	30%	16V
C3	1-163-063-00	CERAMIC MELF 0.022MF		25V
C4	1-124-462-00	ELECT 10MF	20%	16V
C5	1-163-063-00	CERAMIC MELF 0.022MF		25V
C6	1-163-063-00	CERAMIC MELF 0.022MF		25V
C7	1-163-063-00	CERAMIC MELF 0.022MF		25V
C8	1-163-063-00	CERAMIC MELF 0.022MF		25V
C9	1-163-063-00	CERAMIC MELF 0.022MF		25V
C10	1-131-349-41	TANTALUM 2.2MF	10%	35V
C11	1-124-462-00	ELECT 10MF	20%	16V
C12	1-163-181-00	CERAMIC MELF 100PF	10%	50V
C13	1-163-063-00	CERAMIC MELF 0.022MF		25V
C14	1-124-462-00	ELECT 10MF	20%	16V
C15	1-163-059-00	CERAMIC MELF 0.01MF	30%	16V
C16	1-163-063-00	CERAMIC MELF 0.022MF		25V
C17	1-131-377-00	TANTALUM 10MF	10%	10V
C18	1-136-493-91	FILM 0.047MF	5%	50V
C19	1-124-257-61	ELECT 2.2MF	20%	35V
C20	1-124-465-00	ELECT 0.47MF	20%	50V
C21	1-124-224-00	ELECT 47MF	20%	6.3V
C22	1-124-224-00	ELECT 47MF	20%	6.3V
C23	1-124-234-00	ELECT 22MF	20%	16V
C24	1-163-053-00	CERAMIC MELF 0.0033MF	20%	16V
C25	1-131-377-00	TANTALUM 10MF	10%	10V
C26	1-130-482-00	MYLAR 0.0082MF	5%	50V
C27	1-124-245-00	ELECT 4.7MF	20%	16V
C28	1-163-063-00	CERAMIC MELF 0.022MF		25V

ELECTRICAL PARTS

Ref.No.	Part No.	Description		
C29	1-163-063-00	CERAMIC MELF 0.022MF		25V
C30	1-136-489-91	FILM 0.022MF	5%	50V
C31	1-136-489-91	FILM 0.022MF	5%	50V
C32	1-124-464-11	ELECT 0.22MF	20%	50V
C33	1-124-255-00	ELECT 1MF	20%	50V
C34	1-124-255-00	ELECT 1MF	20%	50V
C35	1-163-063-00	CERAMIC MELF 0.022MF		25V
C36	1-131-377-00	TANTALUM 10MF	20%	10V
C37	1-163-059-00	CERAMIC MELF 0.01MF	30%	16V
C38	1-163-063-00	CERAMIC MELF 0.022MF		25V
C39	1-163-063-00	CERAMIC MELF 0.022MF		25V
C40	1-163-189-00	CERAMIC MELF 220PF	10%	50V
C41	1-124-245-00	ELECT 4.7MF	20%	16V
C101	1-130-467-51	MYLAR 470PF	5%	50V
C102	1-124-224-00	ELECT 47MF	20%	6.3V
C103	1-130-482-00	MYLAR 0.0082MF	5%	50V
C104	1-130-491-00	MYLAR 0.047MF	5%	50V
C105	1-124-462-00	ELECT 10MF	20%	16V
C106	1-124-465-00	ELECT 0.47MF	20%	50V
C107	1-124-464-11	ELECT 0.22MF	20%	50V
C108	1-130-479-00	MYLAR 0.0047MF	5%	50V
C109	1-136-173-00	FILM 0.47MF	5%	50V
C110	1-136-167-00	FILM 0.15MF	5%	50V
C111	1-136-169-00	FILM 0.22MF	5%	50V
C112	1-130-493-00	MYLAR 0.068MF	5%	50V
C113	1-130-481-00	MYLAR 0.0068MF	5%	50V
C114	1-130-483-00	MYLAR 0.01MF	5%	50V
C115	1-130-491-00	MYLAR 0.047MF	5%	50V
C116	1-130-485-00	MYLAR 0.015MF	5%	50V
C117	1-124-444-00	ELECT 220MF	20%	10V
C151	1-130-467-00	MYLAR 470PF	5%	50V
C152	1-124-224-00	ELECT 47MF	20%	6.3V
C153	1-130-482-00	MYLAR 0.0082MF	5%	50V
C154	1-130-491-00	MYLAR 0.047MF	5%	50V
C155	1-124-462-00	ELECT 10MF	20%	16V
C156	1-124-465-00	ELECT 0.47MF	20%	50V
C157	1-124-464-11	ELECT 0.22MF	20%	50V
C158	1-130-479-00	MYLAR 0.0047MF	5%	50V
C159	1-136-173-00	FILM 0.47MF	5%	50V
C160	1-136-167-00	FILM 0.15MF	5%	50V
C161	1-136-169-00	FILM 0.22MF	5%	50V
C162	1-130-493-00	MYLAR 0.068MF	5%	50V
C163	1-130-481-00	MYLAR 0.0068MF	5%	50V
C164	1-130-483-00	MYLAR 0.01MF	5%	50V
C165	1-130-491-00	MYLAR 0.047MF	5%	50V
C166	1-130-485-00	MYLAR 0.015MF	5%	50V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C167	1-124-444-00	ELECT	220MF	20%	10V
C191	1-163-063-00	CERAMIC MELF	0.022MF		25V
C192	1-163-063-00	CERAMIC MELF	0.022MF		25V
C193	1-124-229-00	ELECT	33MF	20%	10V
C194	1-124-229-00	ELECT	33MF	20%	10V
C195	1-124-255-00	ELECT	1MF	20%	50V
C201	1-124-462-00	ELECT	10MF	20%	16V
C202	1-130-471-51	MYLAR	0.001MF	5%	50V
C203	1-124-245-00	ELECT	4.7MF	20%	16V
C204	1-163-205-00	CERAMIC MELF	0.001MF	10%	50V
C205	1-124-444-00	ELECT	220MF	20%	10V
C206	1-136-165-00	FILM	0.1MF	5%	50V
C207	1-130-476-00	MYLAR	0.0027MF	5%	50V
C208	1-130-475-00	MYLAR	0.0022MF	5%	50V
C209	1-130-491-00	MYLAR	0.047MF	5%	50V
C210	1-124-255-00	ELECT	1MF	20%	50V
C211	1-163-169-00	CERAMIC MELF	33PF	5%	50V
C212	1-124-245-00	ELECT	4.7MF	20%	16V
C213	1-124-245-00	ELECT	4.7MF	20%	16V
C214	1-124-245-00	ELECT	4.7MF	20%	16V
C215	1-124-245-00	ELECT	4.7MF	20%	16V
C216	1-124-462-00	ELECT	10MF	20%	16V
C217	1-124-462-00	ELECT	10MF	20%	16V
C218	1-124-462-00	ELECT	10MF	20%	16V
C219	1-124-258-00	ELECT	3.3MF	20%	25V
C220	1-163-187-00	CERAMIC MELF	180PF	10%	50V
C221	1-124-258-00	ELECT	3.3MF	20%	25V
C222	1-163-187-00	CERAMIC MELF	180PF	10%	50V
C266	1-124-462-00	ELECT	10MF	20%	16V
C267	1-124-462-00	ELECT	10MF	20%	16V
C268	1-124-462-00	ELECT	10MF	20%	16V
C269	1-124-237-11	ELECT	3.3MF	20%	25V
C270	1-163-187-00	CERAMIC MELF	180PF	10%	50V
C271	1-124-258-00	ELECT	3.3MF	20%	25V
C272	1-163-187-00	CERAMIC MELF	180PF	10%	50V
C291	1-124-229-11	ELECT	33MF	20%	10V
C293	1-124-229-00	ELECT	33MF	20%	10V
C294	1-124-473-11	ELECT	1000MF	20%	10V
C295	1-124-229-00	ELECT	33MF	20%	10V
C296	1-124-229-00	ELECT	33MF	20%	10V
C301	1-124-462-00	ELECT	10MF	20%	16V
C302	1-130-471-00	MYLAR	0.001MF	5%	50V
C303	1-124-245-00	ELECT	4.7MF	20%	16V
C304	1-163-205-00	CERAMIC MELF	0.001MF	10%	50V
C305	1-124-444-00	ELECT	220MF	20%	10V
C306	1-136-165-00	FILM	0.1MF	5%	50V
C307	1-130-476-00	MYLAR	0.0027MF	5%	50V
C308	1-130-475-00	MYLAR	0.0022MF	5%	50V
C309	1-130-491-00	MYLAR	0.047MF	5%	50V
C310	1-124-255-00	ELECT	1MF	20%	50V
C311	1-163-169-00	CERAMIC MELF	33PF	5%	50V
C312	1-124-245-00	ELECT	4.7MF	20%	16V
C313	1-124-245-00	ELECT	4.7MF	20%	16V
C314	1-124-245-00	ELECT	4.7MF	20%	16V
C315	1-124-245-00	ELECT	4.7MF	20%	16V
C316	1-124-462-00	ELECT	10MF	20%	16V
C317	1-124-462-00	ELECT	10MF	20%	16V

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C318	1-124-462-00	ELECT	10MF	20%	16V
C319	1-124-258-00	ELECT	3.3MF	20%	25V
C320	1-163-187-00	CERAMIC MELF	180PF	10%	50V
C321	1-124-258-00	ELECT	3.3MF	20%	25V
C322	1-163-187-00	CERAMIC MELF	180PF	10%	50V
C366	1-124-462-00	ELECT	10MF	20%	16V
C367	1-124-462-00	ELECT	10MF	20%	16V
C368	1-124-462-00	ELECT	10MF	20%	16V
C369	1-124-258-00	ELECT	3.3MF	20%	25V
C370	1-163-187-00	CERAMIC MELF	180PF	10%	50V
C371	1-124-258-00	ELECT	3.3MF	20%	25V
C372	1-163-187-00	CERAMIC MELF	180PF	10%	50V
C401	1-124-119-00	ELECT	330MF	20%	16V
C402	1-124-236-00	ELECT	47MF	20%	10V
C403	1-163-063-00	CERAMIC MELF	0.022MF		25V
C601	1-136-489-91	FILM	0.022MF	5%	50V
C602	1-124-258-00	ELECT	3.3MF	20%	25V
C603	1-124-237-11	ELECT	3.3MF	20%	25V
C604	1-163-059-00	CERAMIC MELF	0.01MF	30%	16V
C605	1-124-257-00	ELECT	2.2MF	20%	35V
C606	1-136-165-00	FILM	0.1MF	5%	50V
C607	1-163-161-00	CERAMIC MELF	15PF	5%	50V
C608	1-163-161-00	CERAMIC MELF	15PF	5%	50V
C609	1-124-462-00	ELECT	10MF	20%	16V
C610	1-163-063-00	CERAMIC MELF	0.022MF		25V
C611	1-124-462-00	ELECT	10MF	20%	16V
C612	1-124-229-00	ELECT	33MF	20%	10V
C613	1-131-377-00	TANTALUM	10MF	10%	10V
C614	1-163-169-00	CERAMIC MELF	33PF	5%	50V
C615	1-163-169-00	CERAMIC MELF	33PF	5%	50V
C616	1-131-377-00	TANTALUM	10MF	10%	10V
C617	1-136-156-00	FILM	0.018MF	5%	50V
C618	1-136-156-00	FILM	0.018MF	5%	50V
C619	1-124-462-00	ELECT	10MF	20%	16V
C620	1-163-169-00	CERAMIC MELF	33PF	5%	50V
C621	1-163-169-00	CERAMIC MELF	33PF	5%	50V
C623	1-136-489-91	FILM	0.022MF	5%	50V
C624	1-124-255-00	ELECT	1MF	20%	50V
C625	1-124-257-00	ELECT	2.2MF	20%	35V
C626	1-124-462-00	ELECT	10MF	20%	16V
C627	1-124-462-00	ELECT	10MF	20%	16V
C628	1-124-465-00	ELECT	0.47MF	20%	50V
C629	1-124-465-00	ELECT	0.47MF	20%	50V
C630	1-124-229-11	ELECT	33MF	20%	10V
C632	1-124-229-00	ELECT	33MF	20%	10V
C633	1-124-255-00	ELECT	1MF	20%	50V
C634	1-124-229-00	ELECT	33MF	20%	10V
C635	1-124-229-00	ELECT	33MF	20%	10V
C636	1-124-229-11	ELECT	33MF	20%	10V
C637	1-124-242-00	ELECT	33MF	20%	16V
C638	1-124-255-11	ELECT	1MF	20%	50V
C639	1-124-119-00	ELECT	330MF	20%	16V
C640	1-124-255-00	ELECT	1MF	20%	50V
C641	1-131-379-00	TANTALUM	22MF	20%	6.3V
C642	1-124-255-00	ELECT	1MF	20%	50V
C643	1-163-059-00	(FORMER)...CERAMIC MELF		0.01MF	30% 16V
C643	1-124-477-11	(NEW).....ELECT		47MF	20% 16V
C644	1-124-257-00	ELECT	2.2MF	20%	35V
C645	1-124-257-00	ELECT	2.2MF	20%	35V

REVISED

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
C646	1-163-063-00	CERAMIC MELF	0.022MF		25V
C648	1-124-255-00	ELECT	1MF	20%	50V
C649	1-163-063-00	CERAMIC MELF	0.022MF		25V
C650	1-163-063-00	CERAMIC MELF	0.022MF		25V
C801	1-124-462-00	ELECT	10MF	20%	16V
C802	1-163-205-00	CERAMIC MELF	0.001MF	10%	50V
C803	1-124-443-00	ELECT	100MF	20%	10V
C804	1-163-173-00	CERAMIC MELF	47PF	5%	50V
C805	1-163-173-00	CERAMIC MELF	47PF	5%	50V
C806	1-124-443-00	ELECT	100MF	20%	10V
C807	1-130-489-00	MYLAR	0.033MF	5%	50V
C808	1-124-444-00	ELECT	220MF	20%	10V
C809	1-124-444-00	ELECT	220MF	20%	10V
C810	1-136-169-00	MYLAR	0.22MF	10%	50V
C811	1-136-169-00	MYLAR	0.22MF	10%	50V
C812	1-136-169-00	MYLAR	0.22MF	10%	50V
C814	1-124-477-11	ELECT	47MF	20%	16V
C851	1-124-462-00	ELECT	10MF	20%	16V
C852	1-163-205-00	CERAMIC MELF	0.001MF	10%	50V
C853	1-124-443-00	ELECT	100MF	20%	10V
C854	1-163-173-00	CERAMIC MELF	47PF	5%	50V
C855	1-163-173-00	CERAMIC MELF	47PF	5%	50V
C856	1-124-443-00	ELECT	100MF	20%	10V
C857	1-130-489-00	MYLAR	0.033MF	5%	50V
C858	1-124-444-00	ELECT	220MF	20%	10V
C859	1-124-444-00	ELECT	220MF	20%	10V
C860	1-136-169-00	MYLAR	0.22MF	10%	50V
C861	1-136-169-00	MYLAR	0.22MF	10%	50V
C862	1-136-169-00	MYLAR	0.22MF	10%	50V
C864	1-124-477-11	ELECT	47MF	20%	16V
C899	1-124-887-00	ELECT	3300MF	20%	16V
C901	1-124-462-00	ELECT	10MF	20%	16V
C902	1-163-205-00	CERAMIC MELF	0.001MF	10%	50V
C903	1-124-443-00	ELECT	100MF	20%	10V
C904	1-163-173-00	CERAMIC MELF	47PF	5%	50V
C905	1-163-173-00	CERAMIC MELF	47PF	5%	50V
C906	1-124-443-00	ELECT	100MF	20%	10V
C907	1-130-489-00	MYLAR	0.033MF	5%	50V
C908	1-124-444-00	ELECT	220MF	20%	10V
C909	1-124-444-00	ELECT	220MF	20%	10V
C910	1-136-169-00	MYLAR	0.22MF	10%	50V
C911	1-136-169-00	MYLAR	0.22MF	10%	50V
C912	1-136-169-00	MYLAR	0.22MF	10%	50V
C914	1-124-477-11	ELECT	47MF	20%	16V
C951	1-124-462-00	ELECT	10MF	20%	16V
C952	1-163-205-00	CERAMIC MELF	0.001MF	10%	50V
C953	1-124-443-00	ELECT	100MF	20%	10V
C954	1-163-173-00	CERAMIC MELF	47PF	5%	50V
C955	1-163-173-00	CERAMIC MELF	47PF	5%	50V
C956	1-124-443-00	ELECT	100MF	20%	10V
C957	1-130-489-00	MYLAR	0.033MF	5%	50V
C958	1-124-444-00	ELECT	220MF	20%	10V
C959	1-124-444-00	ELECT	220MF	20%	10V
C960	1-136-169-00	MYLAR	0.22MF	10%	50V
C961	1-136-169-00	MYLAR	0.22MF	10%	50V
C962	1-136-169-00	MYLAR	0.22MF	10%	50V
C964	1-124-477-11	ELECT	47MF	20%	16V
C999	1-124-887-00	ELECT	3300MF	20%	16V

ELECTRICAL PARTS

Ref.No.	Part No.	Description
CF1	1-567-415-11	FILTER, CERAMIC
CF2	1-567-415-11	FILTER, CERAMIC
CNJ1	*1-563-961-11	SOCKET, CONNECTOR
CNJ804	*1-563-523-11	JACK, PIN 2P (REAR)
CNJ904	*1-563-523-11	JACK, PIN 2P (FRONT)
CNP101	*1-564-002-00	PIN, CONNECTOR 3P
CNP102	*1-564-002-00	PIN, CONNECTOR 3P
CNP103	*1-564-007-00	PIN, CONNECTOR 8P
CNP104	*1-564-002-71	PIN, CONNECTOR 3P
CNP202	*1-564-005-61	PIN, CONNECTOR 6P
CNP210	*1-564-014-51	PIN, CONNECTOR 4P
CNP260	*1-564-002-61	PIN, CONNECTOR 3P
CNP401	*1-566-460-11	PIN, CONNECTOR 4P
CNP402	*1-566-461-11	PIN, CONNECTOR 8P
CNP403	*1-566-008-11	PIN, CONNECTOR 11P
CNP601	*1-560-894-00	PIN, CONNECTOR 6P
CNP602	*1-564-012-61	PIN, CONNECTOR 2P
CNP603	*1-564-017-00	PIN, CONNECTOR 7P
CNP604	*1-564-012-11	PIN, CONNECTOR 15P
CNP605	*1-564-017-00	PIN, CONNECTOR 7P
CNP607	*1-564-012-00	PIN, CONNECTOR 2P
CNP803	1-566-467-11	CONNECTOR 9P
CNP853	*1-506-662-11	CONNECTOR 5P
CP1	1-519-421-11	GAP, DISCHARGE
CP2	1-519-421-11	GAP, DISCHARGE
CP3	1-519-421-11	GAP, DISCHARGE
D1	8-719-911-19	DIODE 1SS119
D2	8-719-911-19	DIODE 1SS119
D3	8-719-911-19	DIODE 1SS119
D4	8-719-911-19	DIODE 1SS119
D201	8-719-109-75	DIODE RD4.3ES-B2
D301	8-719-109-75	DIODE RD4.3ES-B2
D401	8-719-911-19	DIODE 1SS119
D402	8-719-911-19	DIODE 1SS119
D403	8-719-911-19	DIODE 1SS119
D404	8-719-911-19	DIODE 1SS119
D405	8-719-200-02	DIODE 10E-2
D406	8-719-200-02	DIODE 10E-2
D407	8-719-109-93	DIODE RD6.2ES-B2
D501	8-719-404-22	DIODE LN1451C
D502	8-719-404-22	DIODE LN1451C
D503	8-719-404-22	DIODE LN1451C
D504	8-719-404-22	DIODE LN1451C
D505	8-719-404-22	DIODE LN1451C
D506	8-719-404-22	DIODE LN1451C
D507	8-719-404-22	DIODE LN1451C
D508	8-719-404-22	DIODE LN1451C
D509	8-719-404-22	DIODE LN1451C
D510	8-719-404-22	DIODE LN1451C
D511	8-719-404-22	DIODE LN1451C
D512	8-719-404-22	DIODE LN1451C
D513	8-719-404-22	DIODE LN1451C
D514	8-719-404-22	DIODE LN1451C
D515	8-719-404-22	DIODE LN1451C
D516	8-719-404-22	DIODE LN1451C
D517	8-719-404-22	DIODE LN1451C

ELECTRICAL PARTS

Ref.No.	Part No.	Description
D518	8-719-404-22	DIODE LN1451C
D519	8-719-404-22	DIODE LN1451C
D520	8-719-404-22	DIODE LN1451C
D521	8-719-404-22	DIODE LN1451C
D601	8-719-109-89	DIODE RD5.6ES-B2
D602	8-719-110-13	DIODE RD9.1ES-B2
D603	8-719-101-61	DIODE RD6.2EL2
D604	8-719-109-89	DIODE RD5.6ES-B2
D605	8-719-110-13	DIODE RD9.1ES-B2
D606	8-719-101-61	DIODE RD6.2EL2TN
D607	8-719-911-19	DIODE 1SS119
D608	8-719-911-19	DIODE 1SS119
D609	8-719-911-19	DIODE 1SS119
D610	8-719-911-19	DIODE 1SS119
D611	8-719-911-19	DIODE 1SS119
D612	8-719-200-02	DIODE 10E-2
D613	8-719-200-02	DIODE 10E-2
D614	8-719-911-19	DIODE 1SS119
D615	8-719-109-72	DIODE RD3.9ES-B2
D616	8-719-110-13	DIODE RD9.1ES-B2
D617	8-719-110-13	DIODE RD9.1ES-B2
D618	8-719-981-01	DIODE ERA81-004
D619	8-719-109-89	DIODE RD5.6ES-B2
D620	8-719-109-89	DIODE RD5.6ES-B2
D621	8-719-109-89	DIODE RD5.6ES-B2
D622	8-719-109-89	DIODE RD5.6ES-B2
D623	8-719-109-89	DIODE RD5.6ES-B2
D624	8-719-109-89	DIODE RD5.6ES-B2
D625	8-719-911-19	DIODE 1SS119
D626	8-719-911-19	DIODE 1SS119
D627	8-719-911-19	DIODE 1SS119
D628	8-719-200-02	(NEW)...DIODE 10E-2
D801	8-719-200-02	DIODE 10E-2
D851	8-719-200-02	DIODE 10E-2
D901	8-719-200-02	DIODE 10E-2
D902	8-719-931-04	DIODE ERD31-04
D903	8-719-911-19	DIODE 1SS119
D951	8-719-200-02	DIODE 10E-2
F901	1-532-678-11	FUSE, GLASS TUBE (12A)
F902	1-532-419-00	FUSE (3.15)
F903	1-532-360-XX	FUSE (1A)
F904	1-532-360-XX	FUSE (1A)
FE1	1-463-858-11	FRONT END (FM)
FE2	1-463-852-11	TUNER UNIT, AM (AE312-M05)
HP101	1-543-248-11	HEAD
IC1	8-759-604-27	(US, Canadian)..IC M51690L
IC1	8-759-630-66	(AEP, E).....IC M51690L-700
IC2	1-807-502-11	IC STK3400 (75US)
IC101	8-759-604-56	IC M5246FP
IC102	8-752-030-61	IC CXA1097Q
IC201	8-759-604-56	IC M5228FP
IC202	8-759-106-22	IC UPD4052BG
IC203	8-759-208-65	IC TC9188F
IC204	8-759-604-56	IC M5228FP
IC205	8-759-604-56	IC M5228FP
IC206	8-759-100-96	IC UPC4558G2
IC401	8-759-645-16	IC M54516P
IC601	8-759-141-02	IC UPD75104G-545-1B

ELECTRICAL PARTS

Ref.No.	Part No.	Description
IC602	8-759-141-03	IC UPD75108G-593-1B
IC603	8-759-905-47	IC BA338
IC604	8-759-803-37	IC LM7001
IC605	8-759-106-20	IC UPD4050BG
IC801	8-759-208-64	IC TA7251BP
IC851	8-759-208-60	IC TA7250BP
IC901	8-759-208-64	IC TA7251BP
IC951	8-759-208-60	IC TA7250BP
JW1	1-249-366-11	CARBON MELF 0 5% 1/5W
JW2	1-249-366-11	CARBON MELF 0 5% 1/5W
JW3	1-249-366-11	CARBON MELF 0 5% 1/5W
JW4	1-249-366-11	CARBON MELF 0 5% 1/5W
JW5	1-249-366-11	CARBON MELF 0 5% 1/5W
JW6	1-249-366-11	CARBON MELF 0 5% 1/5W
JW7	1-249-366-11	CARBON MELF 0 5% 1/5W
JW8	1-249-366-11	CARBON MELF 0 5% 1/5W
JW9	1-249-366-11	(NEW)...CARBON MELF 0 5% 1/5W
JW201	1-249-366-11	CARBON MELF 0 5% 1/5W
JW202	1-249-366-11	CARBON MELF 0 5% 1/5W
JW203	1-249-366-11	CARBON MELF 0 5% 1/5W
JW602	1-249-366-11	CARBON MELF 0 5% 1/5W
JW604	1-249-366-11	CARBON MELF 0 5% 1/5W
JW652	1-249-366-11	CARBON MELF 0 5% 1/5W
L1	1-410-324-11	MICRO INDUCTOR 4.7UH
L2	1-410-316-11	MICRO INDUCTOR 1UH
L3	1-410-312-11	MICRO INDUCTOR 0.22UH
L4	1-410-328-11	MICRO INDUCTOR 10UH
L5	1-410-330-11	MICRO INDUCTOR 22UH
L6	1-410-330-11	MICRO INDUCTOR 22UH
L7	1-406-233-11	COIL (OSC)
L101	1-235-186-00	ENCAPSULATED COMPONENT
L151	1-235-186-00	ENCAPSULATED COMPONENT
L401	1-408-111-00	MICRO INDUCTOR 3.3UH
L601	1-410-330-11	MICRO INDUCTOR 22UH
L602	1-410-330-11	MICRO INDUCTOR 22UH
L603	1-410-330-11	MICRO INDUCTOR 22UH
L901	1-421-369-00	COIL, CHOKE
L902	1-421-369-00	COIL, CHOKE
M401	3-596-592-01	MOTOR ASSY
PM401	1-454-398-21	SOLENOID, PLUNGER (DIR)
PM402	1-454-398-31	SOLENOID, PLUNGER (FF)
PM403	1-454-398-41	SOLENOID, PLUNGER (REW)
Q1	8-729-600-27	TRANSISTOR 2SC634SP
Q2	8-729-600-27	TRANSISTOR 2SC634SP
Q3	8-729-117-54	TRANSISTOR 2SA1175
Q4	8-729-600-27	TRANSISTOR 2SC634SP
Q5	8-729-600-27	TRANSISTOR 2SC634SP
Q6	8-729-600-27	TRANSISTOR 2SC634SP
Q7	8-729-601027	TRANSISTOR 2SC634SP
Q8	8-729-600-27	TRANSISTOR 2SC634SP
Q9	8-729-600-27	TRANSISTOR 2SC634SP
Q101	8-729-900-89	TRANSISTOR DTC144ES
Q151	8-729-900-89	TRANSISTOR DTC144ES
Q191	8-729-900-98	TRANSISTOR DTC144ES
Q192	8-729-900-89	TRANSISTOR DTC144ES
Q201	8-729-811-24	TRANSISTOR 2SD1012
Q202	8-729-811-24	TRANSISTOR 2SD1012

REVISED

ELECTRICAL PARTS

Ref.No.	Part No.	Description
Q203	8-729-811-24	TRANSISTOR 2SD1012
Q301	8-729-811-24	TRANSISTOR 2SD1012
Q302	8-729-811-24	TRANSISTOR 2SD1012
Q303	8-729-811-24	TRANSISTOR 2SD1012
Q401	8-729-988-12	TRANSISTOR 2SA881
Q402	8-729-905-52	TRANSISTOR 2SD1055
Q601	8-729-600-27	TRANSISTOR 2SC634SP
Q602	8-729-600-27	TRANSISTOR 2SC634SP
Q603	8-729-600-27	TRANSISTOR 2SC634SP
Q604	8-729-600-27	TRANSISTOR 2SC634SP
Q605	8-729-905-52	TRANSISTOR 2SD1055
Q606	8-729-900-80	TRANSISTOR DTC114ES
Q607	8-729-204-83	TRANSISTOR 2SA1048-GR
Q608	8-729-807-11	TRANSISTOR 2SD1802
Q609	8-729-982-22	TRANSISTOR 2SB822
Q610	8-729-982-22	TRANSISTOR 2SB822
Q611	8-729-600-27	TRANSISTOR 2SC634SP
Q612	8-729-811-24	TRANSISTOR 2SD1012
Q613	8-729-117-54	TRANSISTOR 2SA1175
Q614	8-729-905-52	TRANSISTOR 2SD1055
Q615	8-729-982-22	TRANSISTOR 2SB822
Q616	8-729-600-27	TRANSISTOR 2SC634SP
Q618	8-729-900-61	TRANSISTOR DTA114ES
Q619	8-729-905-52	TRANSISTOR 2SD1055
Q620	8-729-900-89	TRANSISTOR DTC144ES
Q621	8-729-600-27	TRANSISTOR 2SC634SP
Q622	8-729-600-27	TRANSISTOR 2SC634SP
Q623	8-729-600-27	TRANSISTOR 2SC634SP
Q624	8-729-600-27	TRANSISTOR 2SC634SP
Q625	8-729-900-80	TRANSISTOR DTC114ES
Q626	8-729-600-27	TRANSISTOR 2SC634SP
Q627	8-729-600-27	TRANSISTOR 2SC634SP
Q628	8-729-900-89	TRANSISTOR DTC144ES
Q629	8-729-900-89	TRANSISTOR DTC144ES
Q630	8-729-600-27	TRANSISTOR 2SC634SP
Q901	8-729-600-27	TRANSISTOR 2SC634SP
R1	1-249-429-11	CARBON MELF 10K 5% 1/5W
R2	1-249-387-11	CARBON MELF 3.3 5% 1/5W
R3	1-249-429-11	CARBON MELF 10K 5% 1/5W
R4	1-249-425-11	CARBON MELF 4.7K 5% 1/5W
R5	1-249-441-11	CARBON MELF 100K 5% 1/5W
R6	1-249-411-11	CARBON MELF 330 5% 1/5W
R7	1-249-425-11	(FORMER).....CARBON MELF 4.7K 5% 1/5W
R8	1-249-429-11	(US, Canadian).CARBON MELF 10K 5% 1/5W
R8	1-249-050-11	(E, AEP).....CARBON MELF 12K 5% 1/5W
R9	1-215-452-00	CARBON MELF 20K 5% 1/5W
R10	1-249-427-11	CARBON MELF 6.8K 5% 1/5W
R11	1-215-414-00	METAL 510 1% 1/6W
R12	1-215-442-00	CARBON MELF 7.5K 5% 1/5W
R13	1-249-441-11	CARBON MELF 100K 5% 1/5W
R14	1-249-393-11	CARBON MELF 10 5% 1/5W
R15	1-247-849-00	CARBON MELF 5.6K 5% 1/5W
R16	1-249-437-11	CARBON MELF 47K 5% 1/5W
R17	1-249-438-11	CARBON MELF 56K 5% 1/5W
R18	1-249-393-11	CARBON MELF 10 5% 1/5W
R19	1-249-417-11	CARBON MELF 1K 5% 1/5W
R20	1-249-419-11	CARBON MELF 1.5K 5% 1/5W
R21	1-249-417-11	CARBON MELF 1K 5% 1/5W
R22	1-215-452-00	CARBON MELF 20K 5% 1/5W

ELECTRICAL PARTS

Ref.No.	Part No.	Description
R23	1-249-422-11	CARBON MELF 2.7K 5% 1/5W
R24	1-247-849-00	CARBON MELF 5.6K 5% 1/5W
R25	1-249-425-11	CARBON MELF 4.7K 5% 1/5W
R27	1-249-423-11	CARBON MELF 3.3K 5% 1/5W
R28	1-249-423-11	CARBON MELF 3.3K 5% 1/5W
R29	1-249-434-11	CARBON MELF 27K 5% 1/5W
R30	1-249-434-11	CARBON MELF 27K 5% 1/5W
R31	1-249-439-11	CARBON MELF 68K 5% 1/5W
R32	1-249-439-11	CARBON MELF 68K 5% 1/5W
R33	1-249-433-11	CARBON MELF 22K 5% 1/5W
R34	1-249-433-11	CARBON MELF 22K 5% 1/5W
R35	1-249-433-11	CARBON MELF 22K 5% 1/5W
R36	1-249-417-11	CARBON MELF 1K 5% 1/5W
R37	1-249-434-11	CARBON MELF 27K 5% 1/5W
R38	1-249-433-11	CARBON MELF 22K 5% 1/5W
R39	1-249-411-11	CARBON MELF 330 5% 1/5W
R40	1-249-433-11	CARBON MELF 22K 5% 1/5W
R41	1-249-429-11	CARBON MELF 10K 5% 1/5W
R42	1-249-425-11	CARBON MELF 4.7K 5% 1/5W
R101	1-249-412-11	CARBON MELF 390 5% 1/5W
R102	1-249-431-11	CARBON MELF 15K 5% 1/5W
R103	1-215-483-00	CARBON MELF 390K 5% 1/5W
R104	1-215-424-00	CARBON MELF 1.3K 5% 1/5W
R105	1-249-419-11	CARBON MELF 1.5K 5% 1/5W
R106	1-215-489-00	CARBON MELF 680K 5% 1/5W
R107	1-249-429-11	CARBON MELF 10K 5% 1/5W
R108	1-249-035-00	CARBON MELF 680 5% 1/5W
R109	1-215-412-00	CARBON MELF 430 5% 1/5W
R110	1-215-433-00	METAL 3.3K 1% 1/6W
R111	1-249-427-11	CARBON MELF 6.8K 5% 1/5W
R112	1-215-433-00	METAL 3.3K 1% 1/6W
R151	1-249-412-11	CARBON MELF 390 5% 1/5W
R152	1-249-431-11	CARBON MELF 15K 5% 1/5W
R153	1-215-483-00	CARBON MELF 390K 5% 1/5W
R154	1-215-424-00	CARBON MELF 1.3K 5% 1/5W
R155	1-249-419-11	CARBON MELF 1.5K 5% 1/5W
R156	1-215-489-00	CARBON MELF 680K 5% 1/5W
R157	1-249-429-11	CARBON MELF 10K 5% 1/5W
R158	1-249-035-00	CARBON MELF 680 5% 1/5W
R159	1-215-412-00	CARBON MELF 430 5% 1/5W
R160	1-215-433-00	METAL 3.3K 1% 1/6W
R161	1-249-427-11	CARBON MELF 6.8K 5% 1/5W
R162	1-215-433-00	METAL 3.3K 1% 1/6W
R191	1-249-429-11	CARBON MELF 10K 5% 1/5W
R193	1-215-469-00	METAL 100K 1% 1/6W
R194	1-249-441-11	CARBON MELF 100K 5% 1/5W
R195	1-249-441-11	CARBON MELF 100K 5% 1/5W
R196	1-249-441-11	CARBON MELF 100K 5% 1/5W
R201	1-215-473-00	CARBON MELF 150K 5% 1/5W
R202	1-249-422-11	CARBON MELF 2.7K 5% 1/5W
R203	1-249-429-11	CARBON MELF 10K 5% 1/5W
R204	1-249-435-11	CARBON MELF 33K 5% 1/5W
R205	1-249-430-11	CARBON MELF 12K 5% 1/5W
R206	1-249-417-11	CARBON MELF 1K 5% 1/5W
R207	1-249-438-11	CARBON MELF 56K 5% 1/5W
R208	1-215-477-00	CARBON MELF 220K 5% 1/5W
R209	1-215-477-00	CARBON MELF 220K 5% 1/5W
R210	1-249-441-11	CARBON MELF 100K 5% 1/5W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R211	1-249-429-11	CARBON MELF	10K	5%	1/5W
R212	1-249-433-11	CARBON MELF	22K	5%	1/5W
R213	1-249-429-11	CARBON MELF	10K	5%	1/5W
R214	1-249-421-11	CARBON MELF	2.2K	5%	1/5W
R215	1-249-429-11	CARBON MELF	10K	5%	1/5W
R216	1-249-428-11	CARBON MELF	8.2K	5%	1/5W
R217	1-249-420-11	CARBON MELF	1.8K	5%	1/5W
R218	1-249-421-11	CARBON MELF	2.2K	5%	1/5W
R219	1-249-432-11	CARBON MELF	18K	5%	1/5W
R220	1-249-433-11	CARBON MELF	22K	5%	1/5W
R221	1-249-429-11	CARBON MELF	10K	5%	1/5W
R222	1-215-471-00	CARBON MELF	120K	5%	1/5W
R260	1-249-441-11	CARBON MELF	100K	5%	1/5W
R261	1-249-429-11	CARBON MELF	10K	5%	1/5W
R262	1-249-433-11	CARBON MELF	22K	5%	1/5W
R263	1-249-429-11	CARBON MELF	10K	5%	1/5W
R264	1-249-421-11	CARBON MELF	2.2K	5%	1/5W
R265	1-249-429-11	CARBON MELF	10K	5%	1/5W
R266	1-249-432-11	CARBON MELF	18K	5%	1/5W
R267	1-249-420-11	CARBON MELF	1.8K	5%	1/5W
R268	1-249-421-11	CARBON MELF	2.2K	5%	1/5W
R269	1-249-432-11	CARBON MELF	18K	5%	1/5W
R270	1-249-433-11	CARBON MELF	22K	5%	1/5W
R271	1-249-429-11	CARBON MELF	10K	5%	1/5W
R272	1-215-471-00	CARBON MELF	120K	5%	1/5W
R291	1-249-441-11	CARBON MELF	100K	5%	1/5W
R292	1-249-441-11	CARBON MELF	100K	5%	1/5W
R293	1-249-405-11	CARBON MELF	100	5%	1/5W
R294	1-249-405-11	CARBON MELF	100	5%	1/5W
R301	1-215-473-00	CARBON MELF	150K	5%	1/5W
R302	1-249-422-11	CARBON MELF	2.7K	5%	1/5W
R303	1-249-429-11	CARBON MELF	10K	5%	1/5W
R304	1-249-435-11	CARBON MELF	33K	5%	1/5W
R305	1-249-430-11	CARBON MELF	12K	5%	1/5W
R306	1-249-417-11	CARBON MELF	1K	5%	1/5W
R307	1-249-438-11	CARBON MELF	56K	5%	1/5W
R308	1-215-477-00	CARBON MELF	220K	5%	1/5W
R309	1-215-477-00	CARBON MELF	220K	5%	1/5W
R310	1-249-441-11	CARBON MELF	100K	5%	1/5W
R311	1-249-429-11	CARBON MELF	10K	5%	1/5W
R312	1-249-433-11	CARBON MELF	22K	5%	1/5W
R313	1-249-429-11	CARBON MELF	10K	5%	1/5W
R314	1-249-421-11	CARBON MELF	2.2K	5%	1/5W
R315	1-249-429-11	CARBON MELF	10K	5%	1/5W
R316	1-249-428-11	CARBON MELF	8.2K	5%	1/5W
R317	1-249-420-11	CARBON MELF	1.8K	5%	1/5W
R318	1-249-421-11	CARBON MELF	2.2K	5%	1/5W
R319	1-249-432-11	CARBON MELF	18K	5%	1/5W
R320	1-249-433-11	CARBON MELF	22K	5%	1/5W
R321	1-249-429-11	CARBON MELF	10K	5%	1/5W
R322	1-215-471-00	CARBON MELF	120K	5%	1/5W
R360	1-249-441-11	CARBON MELF	100K	5%	1/5W
R361	1-249-429-11	CARBON MELF	10K	5%	1/5W
R362	1-249-433-11	CARBON MELF	22K	5%	1/5W
R363	1-249-429-11	CARBON MELF	10K	5%	1/5W
R364	1-249-421-11	CARBON MELF	2.2K	5%	1/5W
R365	1-249-429-11	CARBON MELF	10K	5%	1/5W

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R366	1-249-432-11	CARBON MELF	18K	5%	1/5W
R367	1-249-420-11	CARBON MELF	1.8K	5%	1/5W
R368	1-249-421-11	CARBON MELF	2.2K	5%	1/5W
R369	1-249-432-11	CARBON MELF	18K	5%	1/5W
R370	1-249-433-11	CARBON MELF	22K	5%	1/5W
R371	1-249-429-11	CARBON MELF	10K	5%	1/5W
R372	1-215-471-00	CARBON MELF	120K	5%	1/5W
R401	1-249-038-00	CARBON MELF	1.2K	5%	1/5W
R402	1-247-849-00	CARBON MELF	5.6K	5%	1/5W
R403	1-249-435-11	CARBON MELF	33K	5%	1/5W
R404	1-249-407-11	CARBON MELF	150	5%	1/5W
R405	1-249-435-11	CARBON MELF	33K	5%	1/5W
R408	1-249-421-11	CARBON MELF	2.2K	5%	1/5W
R409	1-249-437-11	CARBON MELF	47K	5%	1/5W
R410	1-249-437-11	CARBON MELF	47K	5%	1/5W
R411	1-249-437-11	CARBON MELF	47K	5%	1/5W
R412	1-249-437-11	CARBON MELF	47K	5%	1/5W
R413	1-249-020-11	CARBON MELF	39	5%	1/5W
R501	1-249-412-11	CARBON MELF	390	5%	1/5W
R502	1-249-412-11	CARBON MELF	390	5%	1/5W
R503	1-249-412-11	CARBON MELF	390	5%	1/5W
R504	1-249-412-11	CARBON MELF	390	5%	1/5W
R505	1-249-412-11	CARBON MELF	390	5%	1/5W
R506	1-249-412-11	CARBON MELF	390	5%	1/5W
R507	1-249-412-11	CARBON MELF	390	5%	1/5W
R508	1-249-412-11	CARBON MELF	390	5%	1/5W
R509	1-249-412-11	CARBON MELF	390	5%	1/5W
R510	1-249-412-11	CARBON MELF	390	5%	1/5W
R511	1-249-412-11	CARBON MELF	390	5%	1/5W
R512	1-249-409-11	CARBON MELF	220	5%	1/5W
R601	1-249-423-11	CARBON MELF	3.3K	5%	1/5W
R602	1-249-424-11	CARBON MELF	3.9K	5%	1/5W
R603	1-249-417-11	CARBON MELF	1K	5%	1/5W
R604	1-249-417-11	CARBON MELF	1K	5%	1/5W
R605	1-249-429-11	CARBON MELF	10K	5%	1/5W
R606	1-249-423-11	CARBON MELF	3.3K	5%	1/5W
R607	1-249-419-11	CARBON MELF	1.5K	5%	1/5W
R608	1-215-493-00	CARBON MELF	1M	5%	1/5W
R609	1-249-425-11	CARBON MELF	4.7K	5%	1/5W
R610	1-249-429-11	CARBON MELF	10K	5%	1/5W
R611	1-249-429-11	CARBON MELF	10K	5%	1/5W
R612	1-249-417-11	CARBON MELF	1K	5%	1/5W
R613	1-249-417-11	CARBON MELF	1K	5%	1/5W
R614	1-249-421-11	CARBON MELF	2.2K	5%	1/5W
R615	1-249-421-11	CARBON MELF	2.2K	5%	1/5W
R616	1-249-421-11	CARBON MELF	2.2K	5%	1/5W
R617	1-249-429-11	CARBON MELF	10K	5%	1/5W
R618	1-249-429-11	CARBON MELF	10K	5%	1/5W
R619	1-249-435-11	CARBON MELF	33K	5%	1/5W
R620	1-249-429-11	CARBON MELF	10K	5%	1/5W
R621	1-249-435-11	CARBON MELF	33K	5%	1/5W
R622	1-249-429-11	CARBON MELF	10K	5%	1/5W
R623	1-249-429-11	CARBON MELF	10K	5%	1/5W
R624	1-249-435-11	CARBON MELF	33K	5%	1/5W
R625	1-249-435-11	CARBON MELF	33K	5%	1/5W
R626	1-249-435-11	CARBON MELF	33K	5%	1/5W
R627	1-249-435-11	CARBON MELF	33K	5%	1/5W

ELECTRICAL PARTS

Ref.No.	Part No.	Description				
R628	1-249-429-11	CARBON MELF	10K	5%	1/5W	
R629	1-249-441-11	CARBON MELF	100K	5%	1/5W	
R630	1-249-441-11	CARBON MELF	100K	5%	1/5W	
R631	1-249-417-11	CARBON MELF	1K	5%	1/5W	
R632	1-249-417-11	CARBON MELF	1K	5%	1/5W	
R633	1-249-429-11	CARBON MELF	10K	5%	1/5W	
R634	1-249-393-11	CARBON MELF	10	5%	1/5W	
R635	1-249-417-11	CARBON MELF	1K	5%	1/5W	
R636	1-249-417-11	CARBON MELF	1K	5%	1/5W	
R637	1-249-429-11	CARBON MELF	10K	5%	1/5W	
R638	1-249-429-11	CARBON MELF	10K	5%	1/5W	
R639	1-249-429-11	CARBON MELF	10K	5%	1/5W	
R640	1-249-441-11	CARBON MELF	100K	5%	1/5W	
R641	1-249-429-11	CARBON MELF	10K	5%	1/5W	
R642	1-249-435-11	CARBON MELF	33K	5%	1/5W	
R643	1-249-436-11	CARBON MELF	39K	5%	1/5W	
R644	1-249-441-11	CARBON MELF	100K	5%	1/5W	
R645	1-215-493-00	CARBON MELF	1M	5%	1/5W	
R646	1-249-417-11	CARBON MELF	1K	5%	1/5W	
R647	1-249-429-11	CARBON MELF	10K	5%	1/5W	
R648	1-249-429-11	CARBON MELF	10K	5%	1/5W	
R649	1-249-425-11	CARBON MELF	4.7K	5%	1/5W	
R650	1-249-423-11	CARBON MELF	3.3K	5%	1/5W	
R651	1-249-441-11	CARBON MELF	100K	5%	1/5W	
R652	1-215-477-00	CARBON MELF	220K	5%	1/5W	
R653	1-249-423-11	CARBON MELF	3.3K	5%	1/5W	
R654	1-247-849-00	CARBON MELF	5.6K	5%	1/5W	
R655	1-249-417-11	CARBON MELF	1K	5%	1/5W	
R656	1-249-417-11	CARBON MELF	1K	5%	1/5W	
R657	1-249-435-11	CARBON MELF	33K	5%	1/5W	
R658	1-249-433-11	CARBON MELF	22K	5%	1/5W	
R659	1-249-417-11	CARBON MELF	1K	5%	1/5W	
R660	1-249-429-11	CARBON MELF	10K	5%	1/5W	
R661	1-249-429-11	CARBON MELF	10K	5%	1/5W	
R662	1-249-417-11	CARBON MELF	1K	5%	1/5W	
R663	1-249-425-11	CARBON MELF	4.7K	5%	1/5W	
R664	1-249-417-11	CARBON MELF	1K	5%	1/5W	
R665	1-249-429-11	CARBON MELF	10K	5%	1/5W	
R666	1-215-477-00	CARBON MELF	220K	5%	1/5W	
R667	1-249-438-11	CARBON MELF	56K	5%	1/5W	
R668	1-249-433-11	CARBON MELF	22K	5%	1/5W	
R669	1-249-432-11	CARBON MELF	18K	5%	1/5W	
R670	1-249-441-11	CARBON MELF	100K	5%	1/5W	
R672	1-249-417-11	CARBON MELF	1K	5%	1/5W	
R673	1-215-858-00	METAL OXIDE	15	5%	1W	F
R674	1-249-417-11	CARBON MELF	1K	5%	1/5W	

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
R675	1-249-417-11	CARBON MELF	1K	5%	1/5W
R676	1-249-417-11	CARBON MELF	1K	5%	1/5W
R677	1-249-405-11	CARBON MELF	100	5%	1/5W
R678	1-249-437-11	CARBON MELF	47K	5%	1/5W
R679	1-249-441-11	CARBON MELF	100K	5%	1/5W
R680	1-249-413-11	CARBON MELF	470	5%	1/5W
R681	1-249-429-11	CARBON MELF	10K	5%	1/5W
R682	1-249-417-11	CARBON MELF	1K	5%	1/5W
R683	1-249-417-11	CARBON MELF	1K	5%	1/5W
R684	1-249-031-11	CARBON MELF	330		
R685	1-249-029-11	(NEW)...CARBON MELF	220	5%	1/5W
R801	1-249-429-11	CARBON MELF	10K	5%	1/5W
R802	1-249-423-11	CARBON MELF	3.3K	5%	1/5W
R803	1-249-397-11	CARBON MELF	22	5%	1/5W
R804	1-249-417-11	CARBON MELF	1K	5%	1/5W
R805	1-249-417-11	CARBON MELF	1K	5%	1/5W
R806	1-249-397-11	CARBON MELF	22	5%	1/5W
R807	1-249-395-11	CARBON MELF	15	5%	1/5W
R851	1-249-429-11	CARBON MELF	10K	5%	1/5W
R852	1-249-423-11	CARBON MELF	3.3K	5%	1/5W
R853	1-249-397-11	CARBON MELF	22	5%	1/5W
R854	1-249-417-11	CARBON MELF	1K	5%	1/5W
R855	1-249-417-11	CARBON MELF	1K	5%	1/5W
R856	1-249-397-11	CARBON MELF	22	5%	1/5W
R857	1-249-395-11	CARBON MELF	15	5%	1/5W
R899	1-249-429-11	CARBON MELF	10K	5%	1/5W
R901	1-249-429-11	CARBON MELF	10K	5%	1/5W
R902	1-249-423-11	CARBON MELF	3.3K	5%	1/5W
R903	1-249-397-11	CARBON MELF	22	5%	1/5W
R904	1-249-417-11	CARBON MELF	1K	5%	1/5W
R905	1-249-417-11	CARBON MELF	1K	5%	1/5W
R906	1-249-397-11	CARBON MELF	22	5%	1/5W
R907	1-249-395-11	CARBON MELF	15	5%	1/5W
R951	1-249-429-11	CARBON MELF	10K	5%	1/5W
R952	1-249-423-11	CARBON MELF	3.3K	5%	1/5W
R953	1-249-397-11	CARBON MELF	22	5%	1/5W
R954	1-249-417-11	CARBON MELF	1K	5%	1/5W
R955	1-249-417-11	CARBON MELF	1K	5%	1/5W
R956	1-249-397-11	CARBON MELF	22	5%	1/5W
R957	1-249-395-11	CARBON MELF	15	5%	1/5W
R999	1-249-429-11	CARBON MELF	10K	5%	1/5W
RV1	1-237-605-11	RES, ADJ, METAL GRAZE 10K (FM SD CENTER-FREQUENCY)			
RV2	1-237-133-11	RES, ADJ, CARBON 4.7K (SEPARATION)			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
RV3	1-230-633-11	RES, ADJ, CARBON 47K (AM SEEK STOP SENSITIVITY)
RV4	1-230-633-11	RES, ADJ, CARBON 47K (FM SEEK STOP SENSITIVITY)
RV5	1-226-774-12	RES, ADJ, METAL GRAZE 47K (SOFT-MUTING)
RV101	1-230-523-11	RES, ADJ, METAL GLAZE 10K (REV/L-CH DOLBY NR LEVEL)
RV102	1-230-523-11	RES, ADJ, METAL GLAZE 10K (NOR/L-CH DOLBY NR LEVEL)
RV151	1-230-523-11	RES, ADJ, METAL GLAZE 10K (REV/R-CH DOLBY NR LEVEL)
RV152	1-230-523-11	RES, ADJ, METAL GLAZE 10K (NOR/R-CH DOLBY NR LEVEL)
RY901	1-515-655-11	RELAY
S401	1-570-249-11	SWITCH, LEAF (TAPE-IN)
S402	1-570-250-11	SWITCH, LEAF (TAPE-OUT)
S403	1-570-248-11	SWITCH, SLIDE (FWD/REV)
S500	1-570-204-31	SWITCH, KEY BOARD (1)
S501	1-570-204-31	SWITCH, KEY BOARD (5)
S502	1-570-204-31	SWITCH, KEY BOARD (MUTING)
S503	1-570-204-31	SWITCH, KEY BOARD (LOUD)
S504	1-570-204-31	SWITCH, KEY BOARD (MAN DISC -)
S505	1-570-204-31	SWITCH, KEY BOARD (LEVEL -)
S510	1-570-204-31	SWITCH, KEY BOARD (2)
S511	1-570-204-31	SWITCH, KEY BOARD (6)
S512	1-570-204-31	SWITCH, KEY BOARD (FM/AM)
S514	1-570-204-31	SWITCH, KEY BOARD (MAN DISC +)
S515	1-570-204-31	SWITCH, KEY BOARD (LEVEL +)
S520	1-570-204-31	SWITCH, KEY BOARD (3)
S521	1-570-204-31	SWITCH, KEY BOARD (DOLBY NR)
S522	1-570-204-31	SWITCH, KEY BOARD (PLAY DIR)
S524	1-570-204-31	SWITCH, KEY BOARD (SEEK TRACK AMS -)
S525	1-570-204-31	SWITCH, KEY BOARD (SELECT)
S530	1-570-204-31	SWITCH, KEY BOARD (4)
S531	1-570-204-31	SWITCH, KEY BOARD (METAL)
S532	1-570-204-31	SWITCH, KEY BOARD (AUX/CD)
S534	1-570-204-31	SWITCH, KEY BOARD (SEEK TRACK AMS +)
S535	1-570-204-31	SWITCH, KEY BOARD (MEM)
S591	1-570-204-31	SWITCH, KEY BOARD (RESET)
S592	1-570-204-31	SWITCH, KEY BOARD (POWER)
S593	1-570-204-31	SWITCH, KEY BOARD (EJECT)
S601	1-553-510-00	(E)...SWITCH, SLIDE (10K/9K)
S603	1-570-771-11	SWITCH, HANDLE
THP1	1-807-762-11	POSISTOR 1.5K
VDR601	1-807-601-11	(FORMER)...VARISTOR, CERAMIC

ELECTRICAL PARTS

Ref.No.	Part No.	Description
X1	1-567-250-11	OSCILLATOR, CERAMIC (456kHz)
X601	1-567-170-00	OSCILLATOR, CERAMIC (4.19MHz)
X602	1-567-170-00	OSCILLATOR, CERAMIC (4.19MHz)
X603	1-567-848-11	VIBRATOR, CRYSTAL (7.2MHz)

ACCESSORY & PACKING MATERIAL

Part No.	Description
1-559-200-11	CORD (WITH CONNECTOR)
1-559-201-11	CORD (WITH CONNECTOR)
3-302-126-00	SCREW, TAPPING (DIA. 5X20)
3-310-655-01	SUPPORT (ND), FITTING
2-259-753-01	BAG, PROTECTION
3-323-208-01	BUSHING, RUBBER
3-323-210-01	ADJUSTOR, STUD BOLT
3-323-268-01	TAPE (C), MAGIC
3-323-269-01	TAPE (D), MAGIC
3-332-186-01	(US).....INDIVIDUAL CARTON
3-332-187-01	(Canadian,AEP,E)...INDIVIDUAL CARTON
3-340-687-01	KNOB (HANDLE FITTING)
3-342-251-01	SHEET, PROTECTION
3-342-252-01	CUSHION (LEFT & RIGHT)
*3-342-257-01	(AEP).....LABEL, C/C
3-701-613-00	BAG, POLYETHYLENE
3-701-623-00	BAG, POLYETHYLENE
3-701-626-00	BAG, POLYETHYLENE
3-701-628-00	BAG, POLYETHYLENE
3-764-760-11	CONNECTION, INSTRUCTIONS
3-764-760-41	(AEP)...CORRECTION, INSTRUCITON
3-764-782-12	(AEP,E)...MANUAL, INSTRUCTION (CD)
3-764-782-41	(AEP).....MANUAL, INSTRUCTION (CD)
*3-764-805-11	INSTRUCTION
3-764-805-21	INSTRUCTION
3-769-173-11	(US, Canadian, E)..MANUAL, INSTRUCTION
3-769-173-41	(AEP).....MANUAL, INSTRUCTION
7-621-255-20	SCREW +P 2X4
7-682-179-01	SCREW +P 5X20
7-684-025-04	N 5, TYPE 2

SECTION 7
TROUBLE SHOOTING

The following checks will assist in the correction of most problems which you may encounter with your unit.
Before going through the check list below, first refer back to the connection and operating procedures.

Radio reception

Preset tuning is not possible.	• Memorize the correct frequency. • The broadcast is weak. → Use manual tuning.
Automatic tuning is not possible.	• The broadcast is weak. → Use manual tuning.
The STEREO indicator flickers.	• Tune in precisely. • The broadcast is weak. → Press the MONO button.

Tape playback

Playback sound is distorted.	• Contamination of the tape head. → Clean the head.
The AMS does not operate correctly.	• There is a noise in the space between selections. • A blank space is too short (less than 4 seconds). • FF is pressed immediately before the following selection. • REW is pressed immediately after the selection starts. • A long pause, or a passage of low frequencies or very low sound level is treated as a blank.

Compact Disc Play

The operation buttons do not work.	• The built-in microprocessor malfunctions. Press the RESET button.
The sound is skipped due to vibration.	• The CDX-A20 compact disc player is installed at an inclined position. • The unit is not installed on the sturdy part of car. • Dusty or defective disc.
A specific selection is skipped for the first time in program play, and is cleared from memory for the second time. ("0" blinks when the corresponding preset number button is pressed.)	• Dusty or deffective disc.

Sony Corporation
Audio Group

9-952-861-11

English
87J0688-1
Printed in Japan
©1987.10